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SUPERFUND REAUTHORIZATION

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ORIGINAL

HEARINGS

BEFORE THE

COMMITTEE ON FINANCE
UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

APRIL 25 AND 26, 1985

Printed for the use of the Committee on Finance

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SUPERFUND REAUTHORIZATION

THURSDAY, APRIL 25, 1985

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The committee met, pursuant to notice, at 10 a.m., in room SD-215, Dirksen Senate Office Building, Hon. Bob Packwood (chairman) presiding.

Present: Senators Packwood, Chafee, Heinz, Wallop, Symms, Grassley, Long, Bentsen, Moynihan, Boren, Bradley, and Mitchell.

[The press release announcing the hearing, background material on Superfund, and the prepared written statements of Senators Chafee, Wallop, Grassley, Bentsen, Baucus, and Mitchell follow:]

[Press Release No. 85-018]

FINANCE COMMITTEE SETS HEARING ON SUPERFUND REAUTHORIZATION

The Senate Committee on Finance has scheduled two days of hearings—April 25 and April 26, 1985—to consider the tax issues raised by the reauthorization of the Hazardous Substance Response Trust Fund [Superfund], Chairman Bob Packwood (R-Oregon), announced today.

Senator Packwood said the committee was interested in hearing testimony from the administration, private industry and witnesses from the public.

Both days of hearings will begin at 9:30 a.m. and are scheduled to conclude at noon each day.

The hearings are to be in room SD-215 of the Dirksen Senate Office Building.

The chairman said the committee is interested in hearing testimony relating to proposals to extend the Superfund hazardous waste cleanup program, with a particular focus on changes in the present Superfund taxes and on additional revenue sources that have been suggested to raise funds for expansion of the program.

"Every member of this committee is committed to continuing the Superfund Program and to a strong Federal effort to clean up hazardous wastes and protect the public interest," Senator Packwood said.

"The issues we are especially interested in exploring in these hearings on April 25 and April 26 are the size and scope of the fund and the impact that tapping particular revenue sources will have on affected industries and on the economy as a whole," the chairman said.

"Clearly, the Committee on Finance is committed to determine how best to raise money for Superfund in a fair, efficient and sensible manner," Senator Packwood said.

The administration is proposing to expand the Superfund from its current authorization level of $1.6 billion, to $5.3 billion over the next 5 years.

However, the Senate Environment and Public Works Committee has recommended the Superfund be expanded to a $7.5 billion spending level.

Superfund is provided for under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, the tax provisions for which are scheduled to expire on September 30, 1985.

BACKGROUND AND ISSUES RELATING TO THE REAUTHORIZATION AND FINANCING OF THE SUPERFUND

Scheduled for Hearings

before the

COMMITTEE ON FINANCE

ON APRIL 25 AND 26, 1985

Prepared by the Staff

of the

JOINT COMMITTEE ON TAXATION

INTRODUCTION

The Committee on Finance has scheduled public hearings on the reauthorization of the Hazardous Substance Response Trust Fund ("Superfund") on April 25 and 26, 1985. This Fund is provided for under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the tax provisions of which are scheduled to expire after September 30, 1985.

The first part of the pamphlet [1] is a summary. The second part discusses the tax and other provisions of present law. The third part reviews the operation of the current Superfund program. Part four summarizes the provisions of S. 51 (The Superfund Improvement Act of 1985) as reported by the Senate Committee on Environment and Public Works on March 7, 1985 (report filed on March 18, 1985, S. Rep. No. 99–11). S. 51 extends and expands the Superfund program authorization statute. (On April 15, 1985, S. 51 was sequentially referred to the Committee on Finance for the purpose of considering title II of the bill and any provisions relating to revenues for the Hazardous Substance Response Trust Fund.) Part five summarizes the Administration's Superfund reauthorization proposal, which was introduced, by request, as S. 494 (nonrevenue aspects) and S. 972 (revenue aspects). Part six summarizes the other Senate bills, introduced thus far in the 99th Congress, relating to financing of the Superfund. Part seven analyzes the issues relating to the reauthorization and financing of the Superfund.

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[1] This pamphlet may be cited as follows: Joint Committee on Taxation, *Background and Issues Relating to the Reauthorization and Financing of the Superfund* (JCS–11–85), April 24, 1985.

I. SUMMARY

A. Present Law

Hazardous Substance Response Trust Fund

Under present law, excise taxes are imposed on crude oil and certain chemicals, and revenues equivalent to these taxes are deposited into the Hazardous Substance Response Trust Fund ("Superfund"). These amounts are available for expenditures incurred in connection with releases or threatened releases of hazardous substances and pollutants or contaminants into the environment. These provisions were enacted in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), which established a comprehensive system of notification, emergency response, enforcement, and liability for hazardous spills and uncontrolled hazardous waste sites.

A crude oil tax of 0.79 cent per barrel is imposed on the receipt of crude oil at a U.S. refinery, the import of crude oil and petroleum products, and the use or export of domestically produced crude oil (if the tax has not already been paid).

An excise tax on chemicals is imposed on the sale or use of 42 specified organic and inorganic substances if they are produced in or imported into the United States. The taxable chemicals generally are chemicals that are hazardous or chemicals which may create hazardous products or wastes when used. The rates vary from 22 cents per ton to $4.87 per ton. (See Table 1 for a list of current law tax rates on chemical feedstocks.)

The taxes generally will terminate after September 30, 1985. However, the taxes would have been suspended during calendar years 1984 or 1985, if, on September 30, 1983, or 1984, respectively, the unobligated trust fund balance were to exceed $900 million, and if the unobilgated balance on the following September 30 would exceed $500 million, even if these excise taxes were to be suspended for the calendar year in question. Further, the authority to collect taxes would otherwise terminate when cumulative receipts from these taxes reach $1.38 billion. (Cumulative revenues from these excise taxes through September 30, 1984, amounted to $0.863 billion.)

Post-closure Liability Trust Fund

Effective after September 30, 1983, an excise tax of $2.13 per dry weight ton is imposed on hazardous waste which is received at a qualified hazardous waste disposal facility and which will remain at the facility after its closure. These tax receipts are deposited into the Post-closure Liability Trust Fund. This trust fund is to assume completely the liability, under any law, of owners and operators of closed hazardous waste disposal facilities which meet certain conditions. No liabilities have yet been assumed by the Trust Fund. These provisions were enacted in CERCLA.

Authority to collect the tax would be suspended for any calendar year after 1984, if the unobligated balance in the Trust Fund exceeded $200 million on the preceding September 30. Further, authority to collect the tax will terminate when cumulative receipts from the crude oil and chemical excise taxes described above reach $1.38 billion, or, if earlier, after September 30, 1985.

B. S. 51 As Reported by the Committee on Environment and Public Works

S. 51, as reported by the Committee on Environment and Public Works, extends the Superfund for five years (through September 30, 1990) at an aggregate funding level of $7.5 billion.

C. Administration Proposal (S. 494 and S. 972) [2]

Tax provisions

The Administration proposal would extend the Superfund through September 30, 1990, and provide a projected $4.5 billion in tax revenues ($5.3 billion including interest and recoveries) to the Fund during the extension period. These revenues would be derived primarily from the following sources:

(1) A five-year extension of the taxes on petroleum and feedstock chemicals, at their present law rates. These taxes would generally expire after September 30, 1990; however, a special rule would provide for earlier suspension or termination of the taxes if the unobligated Superfund balance exceeds $1.5 billion. There is also a trust fund provision under which authority to collect the petroleum, feedstock chemical, and waste management taxes would expire when and if cumulative Superfund receipts after September 30, 1985 (i.e., during the reauthorization period) total $5.3 billion.

(2) A tax on the treatment, storage,[3] disposal (including ocean disposal), or export of hazardous wastes ("waste management" tax), effective October 1, 1985. This tax would be imposed at two distinct rates: (1) a higher rate ($9.80 per ton in fiscal 1986, phasing up to $16.32 in fiscal 1990) for hazardous waste received at a landfill surface impoundment, waste pile, or land treatment unit,[4] and (2) a lower rate ($2.61 per ton in 1986, phasing up to $4.37 per ton in 1990) for ocean disposal, export, or hazardous waste received at a facility other than those listed above (e.g., at a deep well injection facility). These rates would further be adjusted to compensate for shortfalls from overall Superfund revenue targets. Exemptions would be provided for certain hazardous waste disposals pursuant to removal or remedial actions under CERCLA, and for certain waste generated at Federal facilities; however, no general exemption would be provided for the treatment of hazardous wastes. The

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[2] Nonrevenue aspects of the Administration proposal were introduced by Sen. Stafford at the request of the Administration, as S. 494. The revenue aspects were separately introduced as S. 972.

[3] On-site storage of 90 days or less is exempt, but all off-site storage is taxable.

[4] These and other terms generally would be defined by reference to Title II of the Solid Waste Disposal Act, as amended ("SWDA"), also known as the Resource Conservation and Recovery Act ("RCRA").

waste management tax would be intended to raise approximately two-thirds of the total Superfund tax revenues under the Administration proposal.

The Administration proposal would repeal the present law Post-closure Liability Trust Fund and the associated waste disposal tax (Code secs. 4681 and 4682), effective October 1, 1985. Amounts in the fund at that time would be transferred to the Superfund.

Trust fund provisions

Under the Administration proposal, the substantive trust fund provisions would generally be equivalent to present law. However, the proposal would delete natural resource damage claims (section 111(b) of present law CERCLA) as a permitted Superfund expenditure purpose.

D. Other Senate Bills Relating to Financing of Superfund

S. 14 (Sens. Moynihan and Bentsen)—"Hazardous Substance Response Act of 1985"

This bill would impose a waste end tax designed to raise approximately $1.5 billion for the Superfund over a 5-year period. This tax would be intended as a partial, rather than an exclusive, source of revenues for the Superfund.

The tax under S. 14 would be imposed on the disposal or long-term storage of hazardous waste (as defined under RCRA). The tax would be imposed at four different rates: (1) a $45 per ton rate for hazardous waste disposed of by landfill, in waste piles, or by surface impoundment (as defined under RCRA); (2) a $25 per ton rate for ocean dumping or land treatment; (3) a $5 per ton rate for hazardous waste disposed of by underground injection; and (4) a $45 per ton rate for long-term storage of hazardous waste. A taxpayer who could establish the water content of any hazardous waste could pay an alternate $50 per ton on the "dry weight" of such waste. No tax would be imposed under the bill on the treatment or reclamation of hazardous waste as defined by the bill. Exemptions also would be provided for (1) surface impoundments containing treated waste water as part of a biological treatment facility, and (2) certain disposals or long-term storage of hazardous waste pursuant to CERCLA provisions.

The tax under S. 14 would be effective on January 1, 1986, and would expire on September 30, 1990. The Treasury Department (in consultation with EPA) would be required to report to Congress by January 1, 1987, and annually thereafter, concerning the revenues being collected by the tax and Treasury's recommendations for changes (if any) in the tax.

Revenue Amendment to S. 51 (Sen. Stafford)

S. 51 itself does not contain a revenue title; however, a proposed amendment to S. 51, introduced by Senator Stafford, is intended to raise $7.5 billion over a five-year period, using the following revenue sources:

(1) An increased tax rate of 4.5 cents per barrel on crude oil (the present law rate is 0.79 cents per barrel).

(2) An expanded tax on chemical feedstocks, including new taxable substances and increased rates on substances presently subject to tax.[5] The tax rates would be indexed for inflation by reference to the producer price index for organic or inorganic chemicals (as appropriate) and there would be exemptions for exported chemicals and substances used to produce animal feed (in addition to the present law exemptions). The Treasury Department and the International Trade Commission would be directed to report to Congress on the feasibility of a tax on imported chemical derivatives, as a supplement to the feedstocks tax.

The expanded feedstocks and petroleum taxes would generally be effective from January 1, 1985, through September 30, 1990. These taxes would terminate earlier than September 30, 1990, on any date on which the Treasury Department, in a manner to be prescribed by regulations, determines that the sum of amounts received by reason of the petroleum, feedstock chemical, waste end and corporate net receipts taxes (proposed by the amendment) will equal $6.47 billion.

(3) An "environmental toxics" tax on (a) the disposal (or long-term storage) of hazardous waste at a RCRA facility, or (b) any other release of a hazardous substance (using the broader CERCLA definition) into the atmosphere. The tax would be imposed at three rates: (1) a $150 per ton rate for land disposal (including landfills, surface impoundments, or waste piles); (2) a $75 per ton rate on Federally permitted releases of hazardous substances; and (3) a $150 per ton rate on other hazardous substance releases. If the owner or operator of a facility can establish the water content of a hazardous waste or substance, the owner or operator could elect to pay a tax (at the general rates) on a "dry-weight" basis. Exclusions from the disposal tax would be provided for certain disposals and removals under CERCLA.

The environmental toxics tax generally would be effective from the date of enactment through September 30, 1990. The Treasury would be directed to report to Congress concerning the amount of revenues being collected and its recommendations (if any) for improving the tax.

(4) A .014 percent tax on corporate net receipts in excess of $75,000,000. Net receipts would equal gross receipts minus the cost of goods sold by the taxpayer during the taxable year. This tax would be effective on January 1, 1986.

The trust fund provisions of S. 51 (included in the reported bill) would also authorize general revenue appropriations to the Superfund of $44 million per year for fiscal years 1986 through 1990, while retaining the present law expenditure purposes. The bill would further terminate the authority to collect all Superfund taxes when and if cumulative Superfund revenues during the reauthorization period (not including interest and recoveries) total $7.5 billion.

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[5] The taxable substances and applicable tax rates are included as table 8 in the explanation of this amendment.

S. 596 (Sen. Bradley)—"Superfund Extension and Improvement Act of 1985"

This bill would raise $7.5 billion for the Superfund over a five-year period, using three primary tax revenue sources:

(1) A five-year extension of the taxes on petroleum and feedstock chemicals (Code secs. 4611 and 4661), at their present law rates. These taxes would terminate on September 30, 1990; however, these taxes (together with the other Superfund taxes) would expire earlier if Treasury reasonably estimates that cumulative Superfund revenues (not including interest and recoveries) will equal or exceed $7.5 billion.

(2) A waste end tax identical to that included in S. 14, introduced by Senators Moynihan and Bentsen (discussed above).

(3) A tax on the net receipts of any corporation which has gross receipts in excess of $50,000,000 for any taxable year. This tax would be imposed at a rate of 0.083 percent of taxable net receipts, defined as the excess (if any) of gross receipts over the costs of goods sold by the taxpayer for the taxable year. The method for determining cost of goods sold would be established by Treasury regulations. This tax would be effective for taxable years beginning on or after January 1, 1986.

The bill (S. 596) would also allocate $44 million per year to the Superfund from general revenues (i.e., the present law level of appropriations) for fiscal years 1986 through 1990. S. 596 also includes trust fund and other nonrevenue provisions which are the same as S. 51, as reported by the Committee on Environment and Public Works. The bill further includes a specific cleanup schedule for Superfund sites.

S. 886 (Sen. Proxmire)—"Hazardous Waste Reduction Act of 1985"

This bill would impose a tax on all forms of land and ocean disposal of hazardous waste which are regulated by RCRA, as well as on exports of hazardous waste and other unregulated placements of hazardous waste (subject to certain exceptions). The tax would be imposed at a rate of $20 per ton on exports, unregulated placements, and all storage and disposal methods other than underground injection wells, which would be taxed at a $5 per ton rate. Hazardous waste rendered nonhazardous within one year of receipt at a treatment, storage, or disposal facility would receive a full credit against the tax. Further, separate exemptions would be provided for qualified wastewater treatment facilities; certain removal or remedial actions under CERCLA; and movement of waste from interim status facilities being closed by EPA under RCRA. The tax is intended to raise $286 million per year, as part of a comprehensive Superfund funding package. Tax rates would be increased for any fiscal year during which Treasury estimated that this target would not be met.

The tax under S. 886 would be effective from January 1, 1986, through September 30, 1990. The Treasury Department would be required to submit a report to Congress, by April 1, 1986, on the progress being made in implementing the tax, and a further report (by January 1, 1987) including recommendations (if any) for improving the tax.

S. 955 (Sens. Mitchell and Chafee)—"Superfund Revenue Act of 1985"

This bill is intended to raise $7.5 billion over a five-year period (not including interest and recoveries), from the following revenue sources:

(1) An increased tax rate of 1.13 cents per barrel on crude oil.

(2) A tax rate on the same chemical feestocks that are taxed under present law, with increased rates on certain substances.[6] These tax rates would be indexed for inflation by reference to the producer price index for organic and inorganic chemicals (as appropriate), beginning in 1986.

The expanded feedstocks and petroleum taxes would be effective from October 1, 1985, through September 30, 1990.

(3) A tax on the treatment, storage, disposal, or export of hazardous waste. This tax would be imposed at a flat rate of $3.65 per metric ton, to be adjusted for inflation beginning in 1986. In the case of on-site waste water treatment facilities, the taxpayer could elect to pay tax only on the amount of hazardous waste generated rather than the amount of diluted waste actually treated.

This tax would be effective from October 1, 1985, through September 30, 1990.

(4) An 0.3-percent tax on corporate earnings and profits in excess of $5,000,000. The tax would be imposed on all corporations other than S corporations, RICs, and REITs. The tax would be effective for taxable years ending after September 30, 1985, and on or before September 30, 1990; for taxable years straddling October 1, 1985, the tax would be imposed on a proportional basis only.

The bill also authorizes general revenue appropriations of $187.5 million per year to the Superfund for fiscal years 1986–1990.

S. 957 (Sens. Bentsen and Wallop)—"Superfund Excise Tax Act of 1985"

This bill would impose a tax on the sale, lease, or import of tangible personal property by the manufacturer or importer of the property, the revenues from the tax to be allocated to the Superfund. The tax would be limited to manufacturers or importers having $100,000 or more of annual gross receipts from manufacturing. A credit against the tax would be allowed for direct material purchases during the taxable year (i.e., the tax would be similar to a value added tax). Exports of taxable goods and sales (or imports) by governmental units and tax-exempt entities would be exempt from the tax.

The rate of tax is not specified by the bill; this rate would be determined depending upon the amount of revenue necessary (together with any other taxes) in order to finance the Superfund in any fiscal year.

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[6] The taxable substances and applicable tax rates are included as Table 9 in the explanation of this bill.

II. PRESENT LAW

A. Tax Provisions

1. Hazardous substance response taxes and trust fund

Hazardous Substance Response Trust Fund

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA") (P.L. 96–510) established a comprehensive system of notification, emergency response, enforcement, and liability for hazardous substance spills and uncontrolled hazardous waste sites.

The Hazardous Substance Response Trust Fund ("Superfund") was established by CERCLA as a trust fund in the Treasury of the United States. Amounts in the Superfund are available for expenditures incurred under section 111 of CERCLA (as enacted) in connection with releases or threats of releases of hazardous substances into the environment. Allowable costs include (1) costs of responding to the presence of hazardous substances on land or in the water or air, including cleanup and removal of such substances and remedial action, (2) payment of claims for injury to, or destruction or loss of, natural resources belonging to or controlled by the Federal or State governments, and (3) certain costs related to response, including damage assessment, epidemiologic studies, and maintenance of emergency response forces.[7]

Under CERCLA, there are appropriated to the Superfund: (1) amounts equivalent to amounts received in the Treasury under Internal Revenue Code sections 4611 (pertaining to the petroleum tax) and 4661 (pertaining to the tax on certain feedstock chemicals); (2) amounts recovered from responsible parties on behalf of the Superfund under CERCLA; (3) penalties assessed under title I of CERCLA; and (4) punitive damages under section 107(c)(8) of CERCLA (pertaining to damages for failure to provide removal or remedial action upon order of the President). The petroleum and feedstock chemicals taxes are scheduled to expire after September 30, 1985.

In addition to these amounts, CERCLA authorizes general revenue appropriations to the Superfund of $44 million per year for fiscal years 1981 through 1985 (i.e., an aggregate of $220 million) and, for 1985, an additional amount equal to so much of the aggregate authorized to be appropriated for 1981 through 1984 as has not been appropriated before October 1, 1984.

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[7] The Fund also may be used for payment of claims asserted and compensable but unsatisfied under section 311 of the Clean Water Act. All moneys recovered under section 311(b)(6)(B) of the Clean Water Act are appropriated to the Superfund. These claims and moneys involve certain costs arising before the date of enactment of CERCLA.

Not more than 15 percent of the Superfund receipts attributable to taxes and general revenue appropriations may be used for the payment of natural resource damage claims. CERCLA further provides that claims against the Superfund may be paid only out of the Fund. If, at any time, claims against the Fund exceed the balance available for payment of those claims, the claims are to be paid in full in the order in which they were finally determined.

The Superfund has authority to borrow for the purposes of paying response costs in connection with a catastrophic spill or paying natural resource damage claims. Outstanding advances at any time may not exceed estimated tax revenues for the succeeding 12 months; advances for paying natural resource damage claims may not exceed 15 percent of such revenues. All advances must be repaid by September 30, 1985.

The Superfund is managed by the Secretary of the Treasury, who is required to report annually to Congress on the financial condition and operations of the Fund.

Petroleum tax

Present law (sec. 4611 of the Code) imposes an excise tax (the "petroleum tax") of 0.79 cent per barrel on domestic crude oil and on petroleum products (including crude oil) entering the United States for consumption, use, or warehousing. The tax on domestic crude oil is imposed on the operator of any United States refinery receiving such crude oil, while tax on imported petroleum products is imposed on the person entering the product into the United States for consumption, use, or warehousing. If crude oil is used in, or exported from, the United States before imposition of the petroleum tax, the tax is imposed on the user or exporter of the oil.

Domestic crude oil subject to tax includes crude oil condensate and natural gasoline, but not other natural gas liquids. Taxable crude oil does not include oil used for extraction purposes on the premises from which it was produced, such as for powerhouse fuel or for reinjection as part of a tertiary recovery process. In addition, the term crude oil does not include synthetic petroleum (e.g., shale oil, liquids from coal, tar sands, biomass, or refined oil).

Petroleum products which are subject to tax upon being entered into the United States include crude oil, crude oil condensate, natural and refined gasoline, refined and residual oil, and any other hydrocarbon product derived from crude oil or natural gasoline which enters the United States in liquid form. For purposes of determining whether crude oil or petroleum products (and chemicals subject to the feedstock tax) have been produced in, entered into, or exported from the United States, the term United States means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, the Trust Territory of the Pacific Islands, and any possession of the United States. The United States also includes the Outer Continental Shelf areas and foreign trade zones located within the United States. There is no exception for bonded petroleum products. Revenues from the petroleum tax are not paid to Puerto Rico or the Virgin Islands under the cover over provisions of section 7652 of the Code.

Present law specifies that the petroleum tax is to be imposed only once with respect to any petroleum product. Thus, anyone who is otherwise liable for the tax may avoid payment by establishing that the tax already has been imposed with respect to that product.

Amounts equivalent to the revenues from the petroleum tax are deposited in the Superfund.

The petroleum tax is scheduled to expire under present law after September 30, 1985. Present law also contains provisions which would have temporarily triggered-off the tax had revenues accumulated faster than a specified rate. If on September 30, 1983, or September 30, 1984, (1) the unobligated balance in the Superfund had exceeded $900 million, and (2) the Secretary of the Treasury, after consultation with the Administrator of the Environmental Protection Agency, had determined that such unobligated balance would exceed $500 million on September 30 of the following year (if no tax was imposed under section 4611 or section 4661 of the Code during the calendar year following the first date referred to above), then no tax would have been imposed during the first calendar year beginning after the first date referred to above. (As of September 30, 1984, the unobligated balance in the Superfund was $227 million.) Further, the authority to collect the tax terminates should cumulative receipts from the petroleum and chemical taxes reach $1.38 billion (sec. 303 of CERCLA). (As of September 30, 1984, cumulative receipts from these taxes amounted to $0.863 billion.)

Tax on feedstock chemicals

Present law (sec. 4661 of the Code) imposes an excise tax on the sale or use of 42 specified chemical substances ("feedstock chemicals") by the manufacturer, producer, or importer thereof. These chemicals generally are hazardous substances or may create hazardous products or wastes when used. The tax is imposed on feedstock chemicals manufactured in the United States or entered into the United States for consumption, use, or warehousing. The tax rates are specified per ton of taxable chemical, and vary from 22 cents to $4.87 per ton. In the case of a taxable chemical which is a gas (e.g., methane), the tax is imposed on the number of cubic feet of such gas which is equivalent to 2,000 pounds on the basis of molecular weight. (See Table 1 for a list of taxable chemicals and applicable tax rates under present law.)

Table 1.—Present Law Excise Tax on Chemicals

[Dollars per ton]

Chemical	Tax rate
Organic substances:	
Acetylene	4.87
Benzene	4.87
Butadiene	4.87
Butane	4.87
Butylene	4.87
Ethylene	4.87
Methane	3.44
Napthalene	4.87

Table 1.—Present Law Excise Tax on Chemicals—Continued

[Dollars per ton]

Chemical	Tax rate
Propylene	4.87
Toluene	4.87
Xylene	4.87
Inorganic substances:	
Ammonia	2.64
Antimony	4.45
Antimony trioxide	3.75
Arsenic	4.45
Arsenic trioxide	3.41
Barium sulfide	2.30
Bromine	4.45
Cadmium	4.45
Chlorine	2.70
Chromite	1.52
Chromium	4.45
Cobalt	4.45
Cupric Oxide	3.59
Cupric sulfate	1.87
Cuprous oxide	3.97
Hydrochloric acid	.29
Hydrogen fluoride	4.23
Lead oxide	4.14
Mercury	4.45
Nickel	4.45
Nitric acid	.24
Phosphorus	4.45
Potassium dichromate	1.69
Potassium hydroxide	.22
Sodium dichromate	1.87
Sodium hydroxide	.28
Stannic chloride	2.12
Stannous chloride	2.85
Sulfuric acid	.26
Zinc chloride	2.22
Zinc sulfate	1.90

The rates on petroleum and chemical feedstocks were set to achieve a $1.6 billion Superfund program over five years, and to allocate 65 percent of the tax burden to petrochemicals, 20 percent to inorganic chemicals, and 15 percent to petroleum. This allocation was based on the respective proportions of wastes (derived from these chemicals) found in hazardous waste sites (based on data available in 1980). In addition, the feedstock chemical tax rates were limited to 2 percent of wholesale price (based on data available in 1980).

Present law provides six exemptions from the tax on feedstock chemicals. Four of these exemptions were provided in CERCLA as enacted in 1980, and two exemptions were added by the Tax Reform Act of 1984. First, in the case of butane and methane, the tax is not imposed if those substance are used as a fuel. (If those substances are used other than as a fuel, for purposes of the tax, the person so using them is treated as the manufacturer.) A second exemption is provided for nitric acid, sulfuric acid and ammonia (and methane used to produce ammonia) used in the manufacture or production of fertilizer or directly applied as fertilizer. Third, present law provides an exemption for sulfuric acid produced solely as a byproduct of (and on the same site as) air pollution control equipment. Fourth, any substance is exempt to the extent it is derived from coal.

The Tax Reform Act of 1984 (P.L. 98–369) added two further exemptions to the tax on feedstock chemicals. First, the 1984 Act provided an exemption for petrochemicals otherwise subject to the tax (i.e., acetylene, benzene, butane, butylene, butadiene, ethylene, methane, naphtalene, propylene, toluene, and xylene) which are used for the manufacture or production of motor fuel, diesel fuel, aviation fuel, or jet fuel. (The petroleum tax continues to apply to domestic crude oil or imported petroleum products used for these purposes.) This exception applies if the otherwise taxable substance is (1) added to a qualified fuel, (2) used to produce another substance that is added to a qualified fuel, or (3) sold for either of the uses described in (1) or (2) above. Second, the 1984 Act provided that the transitory existence of cupric sulfate, cupric oxide, cuprous oxide, zinc chloride, zinc sulfate, barium sulfide or lead oxide during a metal refining process is not subject to tax if the compound exists in the process of converting or refining non-taxable metal ores or compounds into other (or more pure) non-taxable compounds. (If a substance is removed in the refining process, tax is imposed even if the substance is later reintroduced to the refining process.) These provisions were effective as if enacted as part of CERCLA.

Under present law, if a taxpayer uses a taxable chemical prior to any sale, the tax is imposed as if the chemical had been sold. When a taxable chemical is used to manufacture or produce a second taxable chemical, an amount equal to the tax paid on the first chemical is allowed as a credit or refund (without interest) to the manufacturer or producer of the second chemical (but not in an amount exceeding the tax imposed on the second chemical). Thus, the imposition of tax more than once on the same substance is avoided.

Amounts equivalent to the revenues from the tax on feedstock chemicals are deposited in the Superfund.

The tax on feedstock chemicals is scheduled to expire, together with the petroleum tax, after September 30, 1985, with a provision for earlier termination if the unobligated balance in the Superfund had exceeded $900 million. Further, the authority to collect the tax terminates should cumulative receipts from the petroleum and chemical taxes reach $1.38 billion (sec. 303 of CERCLA).[8]

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[8] These termination provisions are explained in greater detail in the previous section on the petroleum tax.

2. Post-closure liability tax and trust fund

Post-closure Liability Trust Fund

In addition to the Superfund, CERCLA established the Post-closure Liability Trust Fund in the United States Treasury. The Post-closure Liability Trust Fund is to assume completely the liability, under any law (including the liability provisions of CERCLA), of owners and operators of hazardous waste disposal facilities granted permits and properly closed under subtitle C of the Resource Conservation and Recovery Act (RCRA) (Title II of the Solid Waste Disposal Act).[9]

This transfer of liability to the Trust Fund may take place after (1) the owner and operator of the facility has complied with the requirements under RCRA which may affect the performance of the facility after closure, (2) the facility has been closed in accordance with the regulations and the conditions of the permit, and (3) the facility has been monitored (as required by the regulations and permit) for a period not to exceed 5 years after closure to demonstrate that there is no substantial likelihood that any migration offsite or release from confinement of any hazardous substance or other risk to public health or welfare will occur (sec. 107(k) of CERCLA). The transfer of liability is to be effective 90 days after the owner or operator of the facility notifies the Administrator of the Environmental Protection Agency (and the State, if it has an authorized program) that the required conditions have been satisfied. No liabilities have yet been transferred to the Post-closure Trust Fund under present law. In addition to payment of damages and cleanup expenses for such sites, the Trust Fund also may be used to pay costs of monitoring and care and maintenance of a site incurred by other persons, after the the period of monitoring required by RCRA, for facilities meeting the applicable transfer of liability requirements. The Post-closure Liability Trust Fund does not assume the legal liability of waste generators or transporters.

As in the case of the Superfund, claims against the Post-closure Liability Trust Fund may be paid only out of this Trust Fund. If, at any time, claims against this Trust Fund exceed the balance available for payment of those claims, then the claims are to be paid in full in the order in which they are finally determined.

The Post-closure Liability Trust Fund is subject to the same administrative provisions as the Superfund, including the right to borrow limited amounts from the Treasury as repayable advances.

Tax on hazardous wastes

Present law (sec. 4681 of the Code) imposes an excise tax (the "post-closure tax") of $2.13 per dry-weight ton on the receipt of hazardous waste at a qualified hazardous waste disposal facility. The tax applies only to hazardous waste which will remain at the facility after the facility is closed. The tax is imposed on the owner or operator of the qualified hazardous waste disposal facility. It was intended that amounts equivalent to the revenues from this tax be deposited into the Post-closure Liability Trust Fund.

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[9] The Resource Conservation and Recovery Act (RCRA) provides for the regulation and control of operating hazardous waste disposal facilities, as well as the transporation, storage, and treatment of these wastes. Permits generally are required under RCRA for hazardous waste treatment, storage, and disposal facilities.

For purposes of the post-closure tax, the term hazardous waste means any waste (1) having the characteristics identified under section 3001 of the Solid Waste Disposal Act, as in effect on December 11, 1980 (other than waste the regulation of which had been suspended by Congress on that date), and (2) which is subject to reporting and recordkeeping requirements under the Solid Waste Disposal Act as in effect on that date. Qualified hazardous waste disposal facilities are facilities which have received a permit or been accorded interim status under the Solid Waste Disposal Act.

The post-closure tax applies to the receipt of hazardous waste after September 30, 1983. However, if as of September 30 of any calendar year after 1983, the unobligated balance of the Post-closure Liability Trust Fund had exceeded $200 million, no tax would have been imposed during the following calendar year. Further, authority to collect the tax terminates (1) should cumulative receipts from the petroleum and chemical taxes described in the previous section reach $1.38 billion, or, (2) if earlier, after September 30, 1985 (sec. 303 of CERCLA).

B. Non-tax Provisions

1. General provisions

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) provides a statutory scheme to insure prompt response to and cleanup of releases of hazardous substances. The burden of paying for such actions is placed on the responsible party or, where the responsible party cannot be identified or held liable, on producers and users of the chemical feedstocks generally associated with the production of hazardous substances. In general, the law is designed to allow a governmental response to proceed where necessary, with the parties legally responsible for the release of hazardous substances later being held liable (without regard to fault) for damages and costs resulting from the release. To accomplish this, CERCLA created the Hazardous Substance Response Trust Fund ("Superfund"), to be financed by a combination of special environmental taxes and Federal appropriations and to be available for response actions and certain related liability claims.

Under CERCLA, the President is authorized, in the case of a release or threatened release of a hazardous substance or a pollutant or contaminant into the environment, to take whatever removal, remedial or other response action he determines to be appropriate under the National Contingency Plan (originally contained in the Clean Waster Act but subsequently revised to apply to CERCLA). Releases subject to CERCLA include any release of a hazardous substance, other than workplace releases, certain nuclear releases, engine exhausts, and the normal application of fertilizer. Hazardous substances are defined as substances identified in specified sections of the Clean Water Act, the Clean Air Act, the Solid Waste Disposal Act, and the Toxic Substances Control Act, and those designated under CERCLA. Hazardous substances do not include petroleum (unless specifically designated as hazardous under these laws), or natural or synthetic gases. The Environmental Protection Agency (EPA) is authorized to designate additional substances as hazardous if they present substantial danger to the public health or welfare or to the environment.

CERCLA required the Federal government to develop a national list of sites (the National Priorities List) which are serious enough to require remedial action. This National Priorities List is required to include the 400 most hazardous sites, and is required to be updated annually. In compiling this list, the EPA identifies and evaluates hazardous sites, beginning with a preliminary assessment of available information and proceeding (where appropriate) to an actual site inspection. The sites are then ranked according to criteria relating to relative potential danger from the release or threatened release of hazardous substances into the air, surface water, or groundwater at the site, with the highest ranking sites being selected for the National Priorities List.

Sites which are listed on the National Priorities List are eligible for EPA long-term cleanup actions, using money from the Superfund. The State in which the site is located generally is required to pay 10 percent of the capital and first-year operating costs of a remedial action (50 percent or greater for State or locally owned or operated sites) and 100 percent of the operating costs in subsequent years.

As an alternative to proceeding with a Superfund-financed cleanup, the EPA has authority, under section 106 of CERCLA, to initiate enforcement actions (including civil action and administrative orders) to compel responsible parties to finance cleanup activities. The EPA also has broad authority to enter into negotiations with responsible parties regarding voluntary cleanups or cash settlements. The availability of these alternatives (i.e., negotiation, enforcement, and Government-funded cleanup) is intended to permit a larger number of sites to be cleaned up than would be possible using any one method.

If a governmental cleanup is initiated, the EPA has further authority to allow the State to take a lead role in site response (cooperative agreements) or (if EPA takes the leading role) to follow various long-term cleanup strategies. The EPA also may initiate removal actions (including removal of hazardous substances, evacuation of affected persons, and other emergency measures) to prevent immediate and significant harm to human life, health, or the environment.

In addition to the cost of cleanup applications, there is authorized to be paid out of the Superfund certain unsatisfied claims for damages resulting from the release of hazardous substances; claims for injury to, or destruction of, natural resources owned or controlled by the Federal or State governments; and specified costs relating to site response or resource restoration. Payment of these claims by the Fund transfers to the Fund the right of the claimant to sue the party responsible for releasing the hazardous substance; thus, Fund representatives may attempt to recover claim payments from the responsible party or parties. There is no general provision for private damage claims against the Fund.

2. Liability provisions

Section 107 of CERCLA imposes liability for cleanup costs incurred under the National Contingency Plan, and for costs associated with natural resource damages, on any person who is or was the owner or operator of a site or the generator or transporter of hazardous substances released into the environment. A strict liability standard (i.e., regardless of negligence) applies, and only limited defenses (including acts of war, acts of God, and acts of independent third parties where the defendant exercises due care) are allowed. No liability arises with respect to releases permitted under provisions of existing Federal laws or the application of registered pesticides.

Liability under CERCLA is generally limited to $50 million per release, allowing owners and operators more readily to obtain insurance for their ability. In addition, owners and operators of vessels and offshore facilities are required to maintain evidence of financial responsibility, and the President is authorized to provide financial responsibility requirements for onshore facilities beginning in 1985.

The amounts recovered under these liability provisions are deposited in the Superfund. CERCLA also provides for certain penalties and punitive damages which are to be deposited in the fund. These include punitive damages of up to three times the amount of costs incurred as a result of the failure without sufficient cause, by a person liable for a release or threatened release of a hazardous substance, to provide proper removal or remedial action upon order of the President pursuant to the Act.

CERCLA also authorizes creation of an Agency for Toxic Substances and Disease Registry to improve data collection and otherwise assist in matters concerning toxic substances and human health.

3. Related statutes

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (Title II of the Solid Waste Disposal Act) provides for the regulation and control of operating hazardous waste disposal facilities, as well as the transportation, storage, and treatment of these wastes. Permits are required for treatment, storage, and disposal facilities. The Environmental Protection Agency may sue to require cleanup of an active or inactive disposal site if the site is posing an imminent and substantial hazard to public health and if there is a known responsible party. However, this provision does not provide funds for cleanup of hazardous waste disposal sites when the owner is unknown, is not responsible, or is financially unable to pay for these costs.

The Hazardous and Solid Waste Amendments of 1984 (P.L. 98-616) made various amendments to RCRA. These include: prohibitions against the land disposal of specified types of waste (subject to certain EPA determinations) and against the placing of noncontainerized or bulk liquid hazardous waste in landfills; minimum technological standards and groundwater monitoring requirements for land disposal sites; special rules for generators generating between 100 and 1,000 kilograms of hazardous waste per month, and a ban on underground injection near an underground source of drinking water (with an exemption for RCRA and CERCLA cleanups). The 1984 amendments also included a new regulatory program for underground storage tanks.

Federal Water Pollution Control Act ("Clean Water Act"), Section 311

Section 311 of the Federal Water Pollution Control Act (33 U.S.C. 1331) established a $35 million revolving fund maintained by fines, penalties, and appropriations of general revenue. The fund may be used for cleanup of releases of oil into navigable waters and restoration of accompanying natural resources. The Act also establishes strict joint and several liability pertaining to responsibility for cleanup expenses, and authorizes the fund to seek reimbursement from parties who release oil or designated hazardous substances into navigable waters.[10]

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[10] Special oil spill compensation funds were also created under the Trans-Alaska Pipeline Authorization Act (TAPPA) (43 U.S.C. sec. 1651) (maximum $100 million fund), the Outer Continental Shelf Amendments of 1978 (43 U.S.C. sec. 1331) ($200 million fund), and the Deep Water Port Act of 1974 (33 U.S.C. sec. 1502) ($100 million fund), to compensate for damages from specified categories of oil spills. These funds are financed by per barrel fees on certain oil. Collection of the fee under the Deep Water Port Act was suspended by P.L. 98-419 (the Deep Water Port Act Amendments of 1984).

III. OPERATION OF SUPERFUND PROGRAM UNDER PRESENT LAW

A. Superfund Program Activities

Since the Superfund program started operating in 1981, it has been involved mainly in conducting emergency responses ("removal actions") and in identifying and evaluating abandoned waste sites in order to implement long-term cleanup ("remedial action"). As of the end of fiscal year 1984, the Environmental Protection Agency (EPA) had identified 18,884 potentially hazardous sites in the United States. As shown in Table 2, preliminary assessments were completed at 10,767 of these sites (57 percent). Of the sites assessed, investigations were completed at 3,601 sites, and 546 were subsequently placed on the National Priorities List (NPL) based on their high degree of hazard. The EPA estimates, assuming current ranking criteria, that between 1,403 and 2,200 sites will ultimately be added to the NPL.

Table 2.—Status of Potentially Hazardous Waste Sites

[Number of sites]

Site status	Through fiscal year 1984	Projected		
		Low estimate	Middle estimate	High estimate
Listed in ERRIS [1]	18,884	22,000	NA	NA
Preliminary assessment	10,767	15,200	NA	NA
Site investigation	3,601	4,285	NA	NA
National Priorities List [2]	546	1,403	1,800	2,200

[1] The Emergency Remedial and Response Information System (ERRIS) is an inventory of potentially hazardous sites maintained by the EPA.

[2] The National Priorities List contains sites determined to require remediation. An additional 244 sites were proposed for listing in October 1984, and another 26 sites were proposed in April 1985.

Source: U.S. Environmental Protection Agency.

As shown in Table 3, of the 546 sites on the NPL, the EPA anticipates beginning initial remedial cleanup measures at 87 sites and completing cleanup at 15 sites by the end of fiscal year 1985. The EPA has implemented more removal actions (which are generally less expensive and shorter term) than it has remedial actions. By the end of FY 1985, the EPA anticipates completing 576 removal actions.

Table 3.—Superfund Program Activities

[Fiscal years]

Action	1981	1982	1983	1984	1985 [1]	Total 1981–85
Remedial: [2]						
Preliminary assessment	[3] 2,454	[3] 2,454	1,891	3,968	5,215	15,982
Site inspection	[3] 870	[3] 870	550	1,311	1,380	4,981
Feasibility study:						
Program-lead	20	30	84	97	69	300
Enforcement-lead	0	0	23	36	35	94
Remedial design	5	5	6	18	64	98
Remedial action	1	22	19	20	25	87
Completion	0	5	1	0	9	15
Removal: [4]						
Completion	20	63	102	202	189	576

[1] Projected.
[2] Number of sites.
[3] Estimate.
[4] Number of actions.
Source: U.S. Environmental Protection Agency.

B. Hazardous Substance Response Trust Fund

Outlays

Funding for remedial and removal actions comes from the Superfund. As a result of the long start-up time required for planning site remediation projects, outlays from the Superfund have been substantially less than receipts. As shown in Table 4, outlays through fiscal year 1984 were $520.7 million, about 45 percent of the $1,151.7 million received by the Fund in this period.

No claims for injury to, or destruction or loss of, natural resources have yet been paid by the Fund. However, 57 claims for such damages, totaling $2.7 billion, have been submitted by four States to EPA. EPA has rejected the claims because they have not been presented to the responsible party and a restoration plan has not been prepared as required by CERCLA. These claims are currently the subject of litigation.

Table 4.—Superfund Accounts, Fiscal Years 1981–84

[In millions of dollars]

Item	1981	1982	1983	1984	Total, 1981–84
Receipts	145.0	307.4	331.6	367.7	1,151.7
Transfer from Coast Guard	6.7	0	0	0	6.7
Excise taxes	127.9	244.0	230.2	261.2	863.3
Appropriations from general fund	9.0	26.6	40.0	44.0	119.6
Interest income	1.3	34.5	61.0	59.0	155.8
Recoveries	0	2.3	0.4	3.4	6.1
Outlays	8.0	79.6	147.8	285.3	520.7
End of year cash balance	136.9	364.8	548.6	617.6	NA
Budget obligation	40.3	180.7	230.2	465.6	916.8
Removal and remediation	30.7	149.0	175.9	366.7	722.3
Enforcement program	2.5	8.4	17.7	26.7	55.3
Research and development	4.7	13.8	6.8	10.2	35.5
Management	2.3	9.5	11.4	17.2	40.4
Interagency	0	0	18.4	44.8	63.2
Unobligated balance	104.8	231.5	319.7	227.0	NA

Sources: (1) Dept. of Treasury, *Treasury Bulletin*, First quarter, Fiscal 1985, p. 210; (2) U.S. Environmental Protection Agency.

Receipts generally

The primary source of Superfund revenue has been the excise taxes on petroleum and 42 chemicals ("feedstock tax") enacted in 1980. In addition to the excise taxes, appropriations from general revenues provided about 10 percent of the Superfund's financing in the first four years of operation. Interest income has become an increasingly important source of revenue as the Fund's balance has increased (due to receipts in excess of outlays).

When the Superfund was enacted, it was envisioned that collections from parties responsible for hazardous waste sites would replenish the Trust Fund. However, cost recoveries have been small, with only $6.1 million collected through September 1984. Cost recovery proceedings are generally initiated after remediation is completed and total costs are known. The EPA estimates that cost recovery actions will generate $32 million in fiscal year 1986, $55 million in 1987, $85 million in 1988, $115 million in 1987, and $190 million in 1990.

Part of the cost of cleaning Superfund sites is paid by responsible parties directly, under consent orders and settlement agreements with the EPA, and is not recovered by the Superfund. As shown in Table 5, private parties have agreed to expend $364 million on hazardous waste site cleanups, of which $297 million involved sites on the National Priorities List.

Table 5.—Hazardous Waste Site Settlements and Unilateral Orders in Compliance

[Value in millions of dollars]

Site	1980	1981	1982	1983	1984	1985 [1]	Total 1980–85
National priorities list	0	34.0	12.5	99.3	146.5	4.3	296.6
Other	0.9	19.9	7.9	9.3	23.4	4.9	67.3
Total	0.9	53.9	20.4	108.6	169.9	9.1	363.9

[1] Through March 1985.

Source: U.S. Environmental Protection Agency.

Chemical feedstock and petroleum taxes

The chemical feedstock and petroleum excise taxes have generated about three-quarters of the Superfund receipts, although tax revenues are running 20 percent less than the $307 million per year rate projected in 1980. The shortfall is in part due to the economy-wide recession in the early part of the period in which the taxes have been effective. Excise tax liability has increased to $71 million per quarter, in the first two quarters of fiscal year 1984, after declining to $57 million per quarter in fiscal year 1983 (see Table 6). As shown in Table 6, the portion of the excise taxes generated from each category (petrochemicals, inorganic chemicals, and petroleum) has been extremely stable, and is remarkably close to the original estimate (65 percent from petrochemicals, 15 percent from inorganic chemicals, and 20 percent from petroleum).

Table 6.—Revenues from Feedstock and Petroleum Taxes [1]

[Dollar amounts in millions]

Taxable substance	Fiscal year—									
	1981 quarters III-IV		1982 quarters I-IV		1983 quarters I-IV		1984 quarters I-II		Total fiscal years, 1981-84	
	$	%	$	%	$	%	$	%	$	%
Petrochemicals	86	66.2	157	65.6	150	66.1	98	69.0	501	66.7
Inorganic chemicals	24	18.8	42	17.4	40	17.6	23	16.2	128	17.0
Petroleum	19	14.9	39	16.4	36	15.9	20	14.1	118	15.7
Unallocated	0	0.0	1	0.6	1	0.4	1	0.7	4	0.5
Total	129	100.0	239	100.0	227	100.0	142	100.0	751	100.0
Quarterly average	65		60		57		71		63	

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[1] In these data, excise taxes are allocated to the fiscal quarter in which the liability arises (which may be earlier than the quarter in which Treasury receives payment).

Source: Dept. of Treasury, Internal Revenue Service, *SOI Bulletin*, Vol. 3, No. 2, (Fall 1983), pp. 31-34; and updated information from the Statistics of Income Branch of the IRS.

The Internal Revenue Service estimates that the excise taxes, as of March 1984, were paid by 611 companies. Although the average annual chemical feedstock tax liability for 1983 was approximately $0.5 million per taxpayer, most of the revenue is collected from a small number of companies with very large production volumes. From June 1981 through March 1984, the 10 largest payers of the excise taxes accounted for approximately 47 percent of the total tax liability.

IV. SUMMARY OF S. 51, AS REPORTED BY THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

In general

S. 51, as reported by the Committee on Environment and Public Works on March 7, 1985 (S. Rep. No. 99-11, filed on March 18, 1985), extends the Superfund for five years (through September 30, 1990) at an aggregate funding level of $7.5 billion, including tax revenues of $6.47 billion and general revenues of $1.03 billion. Although not containing a full revenue title, S. 51 specifies that an exemption from the chemical feedstocks tax (sec. 4661) is to be allowed for substances used to produce animal feed.[11]

Reauthorization provisions

As reported by the Committee on Environment and Public Works, S. 51 would extend and expand the Superfund program for 5 years at a total cost of $7.5 billion. Several provisions of the legislation would be likely to have a significant cost impact. These include the following provisions:

Scope of program.—The bill clarifies that the President should give primary attention in using Superfund proceeds to releases which present a public health threat, and specifies types of releases which are not covered by the Superfund, including certain contamination of groundwater resulting from natural causes. A special "savings clause" allows the President to respond to any release or threatened release, despite these exclusions, in emergency cases.

Cleanup standards.—The bill expressly defines the standards to be applied in cleaning up Superfund sites, requiring at a minimum that human health and the environment be protected by such cleanups. The specific remedy at any site is left to a case-by-case determination. However, the bill specifies that permanent solutions (e.g., treatment) are to be preferred to shorter-term response (e.g., containment of hazardous waste).

Limits on removal actions.—The bill would expand the criteria under which the general $1 million and one-year (formerly 6 months) duration limits on removal actions may be exceeded, allowing these limits to be exceeded whenever appropriate to achieve a permanent remedy.

Operation and maintenance costs.—The bill would require that when the remedial action is pumping and treatment of contaminated ground or surface waters, the Superfund must provide 90 percent of operation and maintenance costs for a period of 5 years (as opposed to 1 year under the current policy).

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[11] A proposed revenue amendment to S. 51, introduced by Senator Stafford and including specific tax proposals, is discussed in Part VI.

Health studies and toxicological profiles.—The bill would establish a program for conducting health studies at Superfund sites and for requiring health effects research on selected toxic chemicals for which there is inadequate data. This program is authorized at a minimum appropriation level of $50 million per year, or a 5-year total of $250 million. The bill further mandates establishment of a hazardous substance inventory for Superfund sites.

State credit for past expenditures.—The bill would allow a State to receive a credit for pre-Superfund expenditures against the law's required cost-sharing requirement. Additionally, where the State enters into a cooperative agreement with respect to a site on the National Priorities List, the State could receive credit for certain costs incurred prior to any obligation of Federal Funds.

Victims' assistance.—The bill would establish a 5-year, five State demonstration program to provide assistance to the victims of hazardous wastes and toxic chemicals. It is authorized to a funding level of $30 million per year, or $150 million over a period of 5 years; the funding source would be the general revenue authorization described above.

In addition to these provisions, S. 51 includes several procedural and enforcement changes, including increased penalties; a provision for real estate liens against certain responsible parties; and a provision that civil or administrative actions be allowed to be completed before contribution suits between responsible parties may proceed. The bill also requires an opportunity for public comment before remedial actions are taken or settlements agreed to, and allows citizen suits to enforce CERCLA requirements and to seek the performance of nondiscretionary duties by EPA.

Trust fund provisions

S. 51 would modify the present law trust fund provisions to authorize appropriations of up to $206 million per year for fiscal years 1986 through 1990 from general revenues. The bill would retain all present-law expenditure purposes, including natural resource damage claims; as under present law, such claims could not exceed 15 percent of amounts appropriated to the fund. S. 51 would further limit the authority to collect Superfund taxes during the 5-year period beginning October 1, 1985, to $6.47 billion.

V. DESCRIPTION OF ADMINISTRATION PROPOSAL (S. 494 AND S. 972)

A. Overview

The Administration proposal[12] would extend the Superfund through September 30, 1990, and provide a projected $4.5 billion in tax revenues to the fund during the extension period. These revenues would be derived primarily from (1) an extension of the taxes on petroleum and feedstock chemicals under present law, and (2) a tax on the treatment, storage, disposal, and export of hazardous wastes ("waste management" tax), effective October 1, 1985. The waste management tax is intended to raise approximately two-thirds of the tax revenue under the proposal, and the rates of this tax would be adjusted (if necessary) to cover shortfalls in overall Superfund revenues during the extension period. No money would be made available to the Superfund from general revenues. Approximately $800 million of additional Fund income is projected from interest, cost recoveries, and fines, for total 5-year revenue of $5.3 billion.

The Administration proposal would delete natural resources damage claims as a permissible use of the Superfund, impose benchmark cleanup standards for Superfund sites, and make various further changes affecting the use of fund proceeds. No specific schedule for cleanup activities would be provided.

B. Hazardous Substance Superfund

Under the Administration proposal, the Hazardous Substance Response Trust Fund officially would be renamed the "Hazardous Substance Superfund," and would be placed in the trust fund subtitle of the Internal Revenue Code. The Secretary of the Treasury would continue to manage the fund and to report annually to Congress on the financial condition and operations of the fund (Code sec. 9602). The substantive trust fund provisions would generally be the same as under present law, with the following modifications.

First, under the proposal, waste management tax revenues (technically, amounts equivalent to these revenues) would be added to present law Superfund revenue sources.[13] Also, the balance of the Post-closure Liability Trust Fund, as of September 30, 1985, would be transferred to the Superfund, in conjunction with the repeal of that Trust Fund (described below).

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[12] The proposal has been introduced by Senator Stafford, by request, as S. 494 (non-revenue aspects) and S. 972 (revenue aspects).

[13] Present law revenue sources include the petroleum and feedstock chemical taxes (Code secs. 4611 and 4661), amounts recovered on behalf of the fund under CERCLA (as amended), all moneys recovered or collected under section 311(b)(6)(B) of the Clean Water Act, and penalties and punitive damages under the appropriate sections of CERCLA.

Second, the proposal would delete natural resource damage claims (section 111(b) of present law CERCLA) as a permitted expenditure purpose. This would leave three permitted expenditure purposes for the Superfund: (1) response costs; (2) related costs described in section 111(c) of CERCLA; and (3) compensable but unsatisfied claims under section 311 of the Clean Water Act.

Third, as under present law, the Superfund would be allowed to borrow from the Treasury, as repayable advances, amounts not exceeding estimated revenues during the next 12 months; however, such advances would not be limited (as they are under present law) to catastrophic spills. All such advances would be required to be repaid on or before September 30, 1990.

The amended trust fund provisions would be effective on October 1, 1985.

C. Tax Provisions

1. Taxes on petroleum and feedstock chemicals

The Administration proposal would continue the taxes on petroleum (Code sec. 4611) and feedstock chemicals (sec. 4661), at their present law rates, through September 30, 1990.

A special rule would provide for suspension or termination of each of these taxes if, on September 30, 1988 or 1989: (1) the unobligated Superfund balance exceeds $1.5 billion, and (2) the Treasury, after consulting with EPA, determines that this balance will exceed $1.5 billion on the following September 30th if neither of these taxes or the waste management tax (described below) are imposed during the intervening year. If these conditions are met, the tax would be suspended for one year following the date of the determination. Authority to collect the petroleum, feedstock, and waste end taxes would expire when and if Superfund receipts from sources (including tax revenues, interest, recoveries, and fines) total $5.3 billion.

2. Waste management tax

Imposition of tax

Under the Administration proposal, a tax would be imposed on (1) the receipt of hazardous waste at a qualified hazardous waste management unit, (2) the receipt of hazardous waste for transport from the United States for the purpose of ocean disposal, and (3) the export of hazardous waste from the United States. The term "hazardous waste" would mean any waste listed or identified under section 3001 of the Solid Waste Disposal Act (SWDA), as amended. (This portion of the SWDA is also known as the Resource Conservation and Recovery Act (RCRA).) The Treasury, in consultation with EPA, would prescribe rules relating to the imposition of tax, if any, on wastes listed under the SWDA after the date of enactment.

For purposes of the tax, a qualified hazardous waste management unit is defined as (1) the smallest area of land on or in which hazardous waste is placed or, (2) a structure on or in which hazardous waste is placed, provided that such area or structure isolates hazardous waste within a qualified hazardous waste management facility and is required to obtain interim status or a final permit under Subtitle C of the SWDA. A qualified waste management facility is defined as any facility (as defined under Subtitle C of the SWDA) which has received a permit or has been accorded interim status under section 3005 of the SWDA (or an equivalent State program authorized under section 3006 of that Act). This distinction between units and facilities means that tax would not necessarily be imposed at qualified facility until hazardous waste is received at a specific unit that isolates hazardous wastes within the overall facility.

The terms "treatment", "storage", and "disposal" would be defined as in section 1004 of the SWDA. The term "ocean disposal" would be defined as the incineration or dumping of hazardous waste over or into ocean waters or certain waters described in the Marine Protection Research and Sanctuaries Act of 1972.

Tax rates

Statutory rates.—The Administration's proposed waste management tax would be imposed at two distinct rates, depending on the treatment or disposal method employed for the hazardous waste.

For hazardous waste received in a landfill surface impoundment, waste pile, or land treatment unit [14] (that meets the definition of a qualified hazardous management unit), the tax would be imposed at a rate of $9.80 per ton for fiscal year 1986. This rate would be "phased up" in each succeeding fiscal year, reaching a maximum rate of $16.32 for fiscal year 1990 as well as any 1991 extension period (discussed below).

For hazardous waste exported from the United States, received for transport from the United States for purposes of ocean disposal, or received at a qualified hazardous waste management unit other than a landfill, surface impoundment, waste pile, or land treatment unit, the tax rate would be $2.61 per ton for fiscal year 1986, phasing up to $4.37 per ton in fiscal 1990 (and any 1991 extension period).

Rate adjustments.—In addition to the phase-up of rates described above the Administration proposal calls for adjustments in the waste management tax rates, beginning in 1988, to cover any shortfalls of Superfund revenues from all sources (including the petroleum, feedstock and waste end taxes, recoveries, penalties, and interest). These adjustments would be made according to a series of statutory formulas. Each fiscal year of the reauthorization period, aggregate Superfund revenues would be compared to preset "projected revenue amounts" (see Table 7). The waste management tax rates would then be increased, beginning in 1988, to cover overall Superfund revenue shortfalls for the year which is two years earlier than the year in question (i.e., 1988 tax rates would compensate for 1986 shortfalls, and so on), with a final adjustment in 1990-91 in order to meet the original 5-year revenue targets. The formulas in the Administration proposal are intended to ensure that revenue targets are met, without delegating authority to Treasury to readjust the tax rates.

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[14] These terms would be defined as under EPA regulations issued pursuant to sections 3004 and 3005 of the SWDA.

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Table 7.—Projected Superfund Revenues For Purpose of Implementing Rate Adjustments Under Administration Proposal

Fiscal year	Projected overall Superfund revenues (millions)
1986	$978
1987	989
1988	1,035
1990	1,093
1991	1,205

As a final measure to achieve revenue targets, the proposal allows for a maximum 6-month extension of the tax, at 1990 rates, if aggregate receipts for the period from October 1, 1985 through September 30, 1990 are less than $5.2 billion.

Exemptions

Two full exclusions from the waste management tax would be provided under the Administration proposal. First, an exclusion would be provided for the treatment, storage, or disposal of any hazardous waste pursuant to a removal or remedial action under CERCLA, where (1) the response action has been selected or approved by EPA, and (2) the release, or threatened release, of the substances which caused the response action occurred before October 1, 1985. Second, hazardous waste generated at a federal facility, and subsequently received at a qualified hazardous waste management unit or exported from the United States, would be exempt from tax. The Administration proposal does not provide an exemption for the treatment of hazardous wastes.

Procedure and administration

Imposition of tax.—Generally, the tax would be imposed on the owner or operator of a qualified hazardous waste management unit. In the case of ocean disposal, tax would be imposed on the owner or operator of the vessel or aircraft that disposes of hazardous waste in or over the ocean. In the case of export, tax would be on the exporter of hazardous waste.

Credit for tax paid.—The proposal includes a mechanism for credits or refunds where tax is paid with respect to hazardous waste and the waste is subsequently received at another qualified unit, received for transport for ocean disposal, or exported from the United States (i.e., where a second taxable event takes place). The amount of this credit is limited to the product of (1) the lesser of (a) the quanitity of hazardous waste transferred, or (b) the quantity of hazardous waste on which the tax was previously paid, multiplied by (2) the lesser of (a) the rate of tax payable by the party receiving the hazardous waste, or (b) the rate of tax previously paid on the waste. These limitations prevent a refund for an amount greater than the tax originally paid.

Credits or refunds would be made, without interest, to the person who paid the original tax, following the same procedures as would be used for overpayments of tax.

Information reporting.—Persons subject to the waste management tax would be required to submit to the Treasury such information as may be required in regulations, including (but not limited to) information which is required to be provided to EPA under the SWDA. A penalty of $25 per day (but not to exceed $25,000) would be imposed for failure to provide such information, unless it is shown that such failure is due to reasonable cause and not due to willful neglect. The proposal specifies that this is in addition to any other penalty provided by law.

Effective date

The waste management tax would be effective for hazardous waste received or exported after September 30, 1985.

Termination date

The tax would expire after September 30, 1990, unless the Treasury determines that total Superfund receipts for the period October 1, 1985 through September 30, 1990 are less than $5.2 billion. In that case, the tax would terminate no later than March 31, 1991 (at the 1990 rates). Authority to collect the tax (together with the petroleum and feedstock chemical taxes) would expire earlier than September 30, 1990, when and if Superfund receipts during the reauthorization period (including interest and recoveries) total $5.3 billion.

D. Repeal of Post-closure Liability Tax and Trust Fund

The Post-closure Liability Trust Fund and the Associated waste disposal tax (Code secs. 4681 and 4682) under present law would be repealed, effective October 1, 1985. Amounts in the Post-closure Trust Fund at that time would be transferred to the Superfund (as described above).

E. Non-tax Provisions Affecting the Hazardous Substance Superfund

In addition to the tax and trust fund provisions described above, the Administration proposal would make various changes in the non-tax portions of CERCLA. Aspects of the proposal most likely to affect the uses of Superfund proceeds include the following matters:

Scope of activities.—As under present law, the proposal would concentrate Superfund resources on hazardous waste sites (principally, abandoned and uncontrolled sites); municipal and industrial waste sites with problems; and sites governed by RCRA but owned by insolvent companies. However, the proposal also includes a "safety valve" allowing the President to direct response to any emergency hazardous substance release using Superfund proceeds.

Cleanup standards.—The proposal would establish benchmark cleanup standards for Superfund sites. In general, these standards set levels of protection equal to those established by other environmental statutes, and are intended to promote permanent cleanup solutions at Superfund sites.

State responsibilities.—The State "matching share" of capital cleanup costs would be increased from 10 to 20 percent (from 50 to 75 percent for State-operated sites). However, the proposal would also allow States to enact taxes similar to the Superfund taxes (this is preempted under present law), and allow certain State enforcement costs to be eligible for funding.

Enforcement.—Enforcement provisions would be strengthened in several ways, including an increase in civil and criminal penalties; a provision for imposition of real property liens on responsible parties; and delay of contribution suits between potentially liable parties until after enforcement actions are judged or settled.

Community involvement.—The proposal includes a statutory requirement that affected citizens be notified of proposed cleanup actions, and be given an opportunity to comment.

VI. OTHER SENATE BILLS RELATING TO FINANCING OF SUPERFUND

A. S. 14 (Sens. Moynihan and Bentsen)—"Hazardous Substance Response Act of 1985"

Overview

S. 14 ("The Hazardous Substance Response Act of 1985"), introduced by Senators Moynihan and Bentsen, would impose a "waste end" tax designed to raise approximately $1.5 billion of Superfund revenues over a five-year period. The tax would be imposed on four different categories of hazardous waste, depending on the method of disposal or storage used for managing the hazardous waste, and would provide an exemption for hazardous waste treatment facilities. The tax imposed by the bill is intended to be an additional, rather than an exclusive, source of revenues for the Superfund.

Imposition of tax

The bill would impose a tax on (1) the receipt of a hazardous waste for disposal at a qualified hazardous waste disposal facility, or (2) the long-term storage of a hazardous waste in a qualified hazardous waste storage facility. Long-term storage would be defined as storage for one year or more.[15]

Hazardous waste subject to the tax would include any waste which is identified or listed under section 3001 of the Solid Waste Disposal Act (SWDA) as in effect on the date of enactment of the bill, other than waste the regulation of which has been suspended by Congress, and which is subject to recordkeeping requirements under sections 3002 and 3004 of that Act. The tax would not apply to any wastes which are exempt from regulation as a hazardous waste under section 3001 of the SWDA as of the date of enactment. If any waste is subsequently determined by EPA to pose a potential danger to human health and the environment following studies under section 8002 of the SWDA, and if EPA promulgates regulations for the disposal of such waste, then the bill directs EPA to transmit to Congress a recommendation for imposing tax on the disposal or long-term storage of such waste. Tax would actually be imposed only when authorized by legislation.

Qualified hazardous waste storage facilities would include any storage facility, waste pile, or surface impoundment permitted or accorded interim status under section 3005 of the SWDA.[16] Qualified hazardous waste disposal facilities would mean any disposal facility permitted or accorded interim status under section 3005 of the SWDA, section 102 of the Marine Protection, Research and Sanctuaries Act, or part C of the Safe Drinking Water Act.

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[15] For purposes of this rule, in the case of fungible waste, the last waste placed in a facility would be presumed to be the first waste removed (i.e., LIFO accounting).

[16] The terms "waste pile" and "surface impoundment" would be defined by reference to the SWDA.

For purposes of the tax, the term disposal would mean the discharge, deposit, injection, dumping, or placing of any hazardous waste into or on any land or water so that such hazardous waste may enter the environment.

Tax would not be imposed on hazardous waste that is "treated" within one year after receipt at a hazardous waste facility. Treatment is defined as any method, technique, or process designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to convert it to a nonhazardous waste.[17]

Tax would also not be imposed under the bill on the hazardous waste that is reclaimed. Reclamation includes (1) the processing of hazardous waste to recover a usable product (or to regenerate the waste), (2) the use of hazardous wastes as an ingredient (including an intermediate ingredient) in an industrial process, and (3) the use of hazardous wastes as an effective substitute for a commercial product. Reclamation does not include the use of hazardous wastes to produce products that are applied to the land or burned for energy recovery.

Tax would be imposed on the byproduct or residue from any treatment or reclamation method where such byproduct or residue itself constituted a hazardous waste.

Tax rates

Tax would be imposed on four categories of hazardous waste, depending upon the disposal or storage method employed.

(1) *Land disposal.*—A $45 per ton tax rate would apply to hazardous waste disposed of in landfills, waste piles, or surface impoundments (as defined under the SWDA).

(2) *Ocean dumping or land treatment.*—A $25 per ton tax rate would apply to hazardous waste disposed of by ocean dumping or land treatment.[18]

(3) *Underground injection.*—A $5 per ton tax rate would apply to hazardous waste which is disposed of by underground injection.

(4) *Long-term storage.*—A $45 per ton tax rate would apply to hazardous waste which is stored for more than one year.

As an alternative to the tax rates above, if the owner or operator of a qualified hazardous waste storage or disposal facility can establish the water content of the hazardous waste deposited for storage or disposal, the owner or operator could elect, pursuant to Treasury regulations, to pay a tax of $50 per ton on the amount of such waste reduced by the weight of water (i.e., on a "dry weight" basis).

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[17] For this purpose, air and water effluents permitted by the Federal Government or by delegated State agencies, under the Clean Air Act or the Clean Water Act, would be treated as nonhazardous wastes.

[18] Land treatment is a form of disposal regulated under RCRA. This is distinct from treatments as defined by the bill, which would be exempt from tax.

Exclusions from tax

The treatment or reclamation of hazardous waste (as defined under the bill) would generally not be subject to tax. The bill also would provide the following specific exclusions from otherwise applicable tax:

First, no tax would be imposed on the disposal or long-term storage of wastes in a surface impoundment which is part of a secondary or tertiary phase of a biological treatment facility subject to a permit issued under section 402 of the Clean Water Act. This exclusion would apply only if the facility is in compliance with generally applicable ground water monitoring requirements for facilities permitted under section 3005(c) of the SWDA.

Second, no tax would be imposed on the disposal or long-term storage of certain wastes under the provisions of CERCLA. This exclusion would apply to (1) any waste disposed of in the course of carrying out a removal or remedial action under CERCLA (provided that the disposal or storage is carried out in accordance with a plan approved by EPA or the State), (2) any waste removed from a faciity listed on the National Priorities List, and (3) any waste removed from a facility for which notification has been provided to EPA under section 103(c) of CERCLA (relating to certain nonpermitted facilities) or 105 of CERCLA (relating to the establishment of the national contingency plan for the removal of oil and hazardous substances).

Procedure and administration

Liability for tax.—The tax would be imposed on the owner or operator of the qualified hazardous waste disposal or storage facility. In the case of disposal, the tax would be imposed at the time that the owner or operator of the facility signs (or is required to sign) the manifest or shipping paper accompanying the hazardous waste (in the case of onsite facilities, the time at which the description and quantity of the hazardous waste are entered, or required to be entered, in the operating record). In the case of long-term storage, the tax would be paid at the expiration of one year following the date the waste was initially stored.

In the case of hazardous waste that is not disposed of or stored at a qualified facility as required in applicable regulations (e.g., "midnight dumping"), the tax would be imposed on the person disposing of or storing the hazardous waste.

Credit for prior tax.—Under the bill, if a person pays tax on the long-term storage of a hazardous waste, and the same person subsequently disposes of the waste, a credit would be allowed against the otherwise applicable disposal tax for any tax previously paid on the storage of the waste. If one person pays tax on the long-term storage of a waste and subsequently delivers that waste to another person, who is the owner or operator of a qualified disposal facility, then a nonrefundable credit would be allowed to the first person.[19]

Information reporting.—The bill would require any person liable for tax to keep records and comply with rules and regulations established by the Treasury Department to ensure proper assessment and collection of the tax. The Treasury Department would be directed to consult with EPA to ensure that records, statements, and returns for tax purposes be consistent, to the extent possible, with reports required to be submitted to EPA under the Solid Waste Disposal Act. As part of this coordination, the Treasury could require any generator, transporter, disposer, or storer of hazardous wastes to submit to the Treasury copies of records or reports required under the SWDA, the Marine Protection, Research and Sanctuaries Act, or the Safe Drinking Water Act.

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[19] For purposes of implementing these rules, in the case of fungible wastes, a "last-in first-out" presumption would apply.

Allocation to Superfund

Revenues from the tax (technically, amounts equivalent to these revenues) would be allocated to the Superfund under the appropriate provision of CERCLA.

Effective date

The tax generally would be effective for hazardous waste received for disposal or placed into long-term storage on or after January 1, 1986.

Termination date

The tax imposed by the bill would expire on September 30, 1990.

Study

The bill would require the Secretary of the Treasury, in consultation with the EPA Administrator, to submit to Congress not later than January 1, 1987, and annually thereafter, (1) a report on the amount of revenues being collected by the tax imposed by the bill, and (2) the Secretary's recommendations (if any) for changes in the tax. These would include recommended changes in order to (1) raise the amount of revenue originally anticipated from the tax, (2) ensure that the tax is discouraging the environmentally unsound disposal of waste, and (3) ensure that the tax is being collected with maximum administrative feasibility.

B. Revenue Amendment to S. 51 (Sen. Stafford)

S. 51, as reported by the Committee on Environment and Public Works, provides for a 5-year extension of the Superfund at an aggregate $7.5 billion funding level, not including interest and recoveries (discussed in Part IV above). A proposed amendment to S. 51, introduced by Senator Stafford,[20] is intended to raise this $7.5 billion over a five-year period, using the following revenue sources: (1) an extension of the petroleum tax at a 4.5 cent per barrel rate; (2) an expanded and (in some cases) increased tax on chemical feedstocks, to be indexed for inflation and including and export exemption; (3) a tax on disposals of hazardous waste as well as releases of hazardous substances (as defined by CERCLA) into the environment; and (4) a tax on a corporation's net receipts in excess of $75 million. The amendment would further direct a study of a tax on imported chemical derivatives to complement the chemical feedstock tax. Total Superfund revenues also would include $206 million per year of general revenue appropriations.

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[20] 131 Cong. Rec. S. 526 (Jan. 22, 1985). This amendment is a corrected version of an amendment orginally introduced on January 3.

In line with proposed funding level of S. 51, the authority to collect any Superfund taxes would terminate when the aggregate Superfund revenues during the reauthorization period equalled $7.5 billion.

Petroleum tax

The amendment would increase the present law environmental excise tax on petroleum from 0.79 cent per barrel tax to 4.5 cents per barrel, effective from January 1, 1985, through September 30, 1990. The tax would terminate earlier than September 30, 1990, on any date on which the Treasury Department, in a manner to be prescribed by regulations, determines that the sum of amounts received by reason of the petroleum, chemical feedstock, waste end and corporate net receipts taxes (proposed by the amendment) will equal $6.47 billion.

Tax on feedstock chemicals

Tax rates

The amendment would extend and expand the present law environmental excise tax on feedstock chemicals, so that the specified organic and inorganic substances sold by the manufacturer, producer, or importer would be taxed in accordance with the following table (Table 8).

Table 8.—Chemical Tax Rates Under Present Law and Proposed Revenue Amendment to S. 51

[Tax rates per ton, before any inflation adjustment]

Chemical substance	Present law	Proposed rate on sales during 1985	Proposed rate on sales after 1985
Organic chemicals:			
Acetylene	$4.87	$8.83	$10.23
Benzene	4.87	6.60	8.80
Butadiene	4.87	9.79	10.23
Butane	4.87	4.87	5.60
Butylene	4.87	5.15	6.87
Ethylene	4.87	6.89	9.19
Methane	3.44	3.44	3.44
Naphthalene	4.87	6.89	9.19
Propylene	4.87	5.87	7.82
Toluene	4.87	5.19	6.92
Xylene	4.87	7.70	10.23
Inorganic chemicals:			
Ammonia	2.64	2.64	3.52
Antimony	4.45	9.34	9.34
Antimony trioxide	3.75	7.87	7.88
Arsenic	4.45	9.34	9.34

Table 8.—Chemical Tax Rates Under Present Law and Proposed Revenue Amendment to S. 51—Continued

[Tax rates per ton, before any inflation adjustment]

Chemical substance	Present law	Proposed rate on sales during 1985	Proposed rate on sales after 1985
Arsenic trioxide	3.41	7.16	7.16
Barium sulfide	2.30	4.83	4.83
Bromine	4.45	9.34	9.34
Cadmium	4.45	9.34	9.34
Chlorine	2.70	3.05	4.07
Chromite	1.52	1.52	1.52
Chromium	4.45	9.34	9.34
Cobalt	4.45	9.34	9.34
Cupric oxide	3.59	7.54	7.54
Cupric sulfate	1.87	3.93	3.93
Cuprous oxide	3.97	8.34	8.34
Hydrochloric acid	0.29	0.61	0.61
Hydrogen fluoride	4.23	8.88	8.88
Lead oxide	4.14	0	0
Mercury	4.45	9.34	9.34
Nickel	4.45	9.34	9.34
Nitric acid	0.24	0.50	0.50
Phosphorus	4.45	9.34	9.34
Potassium dichromate	1.69	3.55	3.55
Potassium hydroxide	0.22	0.46	0.46
Sodium dichromate	1.87	3.93	3.93
Sodium hydroxide	0.28	0.59	0.59
Stannic chloride	2.12	4.45	4.45
Stannous chloride	2.85	5.98	5.98
Sulfuric acid	0.26	0.55	0.55
Zinc chloride	2.22	4.66	4.66
Zinc sulfate	190	3.99	3.99
Additional organix or inorganic chemicals:			
Acetone	0	8.64	8.64
Barium	0	0.81	0.81
Bis (2-ethylhexyl) phthalate	0	8.64	8.64
Carbon tetrachloride	0	8.43	8.43
Chlorobenzene	0	27.66	27.66
Chloroform	0	25.93	25.93
1,2-Dichloroethane	0	4.54	4.54
Etylbenzene	0	27.33	27.33
Lead	0	8.27	11.03
Methylene chloride	0	21.61	21.61
Methyl ethyl ketone	0	14.26	14.26
Pentachlorophenol	0	28.59	28.59
Phenol	0	44.95	44.95
1,1,2,2,-Tetrachloroethane	0	6.05	6.05

Table 8.—Chemical Tax Rates Under Present Law and Proposed Revenue Amendment to S. 51—Continued

[Tax rates per ton, before any inflation adjustment]

Chemical substance	Present law	Proposed rate on sales during 1985	Proposed rate on sales after 1985
1,1,2,2,-Tetrachloroethene	0	21.18	21.18
Trichloroethylene	0	60.51	60.51
1,1,1-Trichloroethane	0	39.33	39.33
Vinylchloride	0	11.24	11.24

For each year, the rates specified in the table would be adjusted for inflation. In the case of organic substances, the inflation adjustment for any year would be the percentage by which the average producer price index for basic organic chemicals of the Bureau of Labor Statistics, for the 12-month period ending in September of the preceding year, exceeds the comparable average of the index for the 12 months, ending in September 1984. In the case of inorganic substances, the inflation adjustment for any year would be the percentage by which the average producer price index for basic inorganic chemicals for the 12-month period ending in the preceding September exceeds the comparable averages for the 12 months ending in September 1984.[21]

Exemptions

The amendment would retain the present law exemptions to the tax on feedstock chemicals, and add the following two exemptions.

Exports of taxable chemicals.—The amendment would provide that the tax on feedstock chemicals is not to apply to feedstock chemicals that are exported from the United States. In particular, the amendment would exempt from tax any taxable substance that is sold by the manufacturer or producer for export, or for resale to a second purchaser for export. If the purchaser cannot certify in advance that a substance will be exported, or if a tax has otherwise been paid on the exported substance, the person who paid the tax could claim a refund or credit (without interest) for the amount of the tax previously paid; such person would be required to repay the tax to the exporter or to obtain the exporter's written consent to his receiving the credit or refund. The Treasury would be authorized to prescribe necessary regulations for administering these provisions.[22]

Substances used to produce animal feed.—An exemption from the feedstock tax would be provided for nitric acid, sulfuric acid, phosphoric acid, or ammonia (or methane used to produce ammonia) used in a qualified animal feed use by the manufacturer, producer, or importer, or else sold for use (or for resale for ultimate use) in a qualified animal feed use.[23] Qualified animal feed use would mean any use in the manufacture or production of animal feed or animal feed supplements, or of ingredients used in animal feed or animal feed supplements. If tax is paid and a substance is subsequently used in a qualified animal feed use, under Treasury regulations, the person so using the substance would be entitled to a credit or refund (without interest) of the tax paid. Conversely, if an exemption is allowed and a substance is subsequently sold or used for a non-animal feed purpose, the person so selling or using the substance would be subject to tax as if he had manufactured the substance.

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[21] Tax rates would not be reduced below the levels shown in Table 6 even if the producer price index declines.

[22] Rules similar to the rules of sec. 4221(b) (regarding sales for further manufacture or export for excise tax purposes) would apply in determining proof of export.

Effective date

The amendments to the tax on feedstock chemicals would be effective from January 1, 1985.

Termination date

The tax would expire after September 30, 1990, with a provision for earlier expiration if the sum of Superfund tax revenues equals $6.47 billion (discussed above under the petroleum tax).

Environmental toxics tax

Imposition of tax

The amendment would impose a tax on (1) the release of any hazardous substance,[24] and (2) the receipt of a hazardous waste for disposal at a hazardous waste disposal facility.

Hazardous waste subject to the disposal tax (item (2) above) would include any waste (1) which is identified or listed under section 3001 of the Solid Waste Disposal Act (SWDA) as in effect on the date of enactment of the proposal, other than waste the regulation of which has been suspended by Congress, and (2) which is subject to recording or recordkeeping requirements under sections 3002 and 3004 of that Act. The tax would not apply to any wastes which are exempt from regulation as a hazardous waste under section 3001 of the SWDA as of the date of enactment. If any waste is subsequently determined by EPA to pose a potential danger to human health and environment, following studies under section 8002 of the SWDA, and if EPA promulgates regulations for the disposal of such waste, the amendment directs EPA to transmit to Congress a recommendation for imposing a tax (if any) on the disposal or long-term storage of such waste. This tax could actually be imposed only when authorized by legislation.

Hazardous waste disposal facilities would mean any disposal facility issued a permit or accorded interim status under section 3005 of the SWDA. The term "disposal", in turn, would mean the discharge, deposit, injection, dumping, or placing of any hazardous waste into or on any land, air,[25] or water so that such hazardous waste may enter the environment.

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[23] The animal feed exemption is also included in S. 51 itself, effective on the date of enactment of that bill.

[24] For these purposes, the terms "release" and "hazardous substance" (as well as the term "environment") would have the meanings assigned by CERCLA. This is distinct from the term "hazardous waste," which would be subject to tax on disposal and is specially defined by the amendment.

Tax rates

The tax would be imposed on three categories of waste, depending upon the type of waste and the method of release or disposal involved:

(1) *Land disposal methods.*—A tax at $150 per ton would be imposed for hazardous waste (as defined by the amendment) disposed of by landfill, by surface impoundment, or in waste piles.[26]

(2) *Federally permitted releases.*—A tax of $75 per ton would be imposed on hazardous substances (as defined by CERCLA) released in compliance with federally permitted release.

(3) *Other releases.*—A $150 per ton rate would apply to hazardous substances (as defined by CERCLA) released in any other manner.

The tax would generally be imposed on a "wet-weight" basis (i.e., including the volume of water which is part of the hazardous substance or waste). However, under the amendment, Treasury is authorized to issue regulations providing that, if the owner or operator of a hazardous waste disposal or hazardous substance handling facility can establish the water content of the hazardous waste or substance deposited or released, then the owner or operator could elect to pay a tax (at the general rates) on the weight of the hazardous weight reduced by the weight of such water (i.e., on a "dry-weight" basis).

Exemptions

As indicated above, the disposal of hazardous waste which is exempt from regulation under RCRA would not be subject to the tax. Specific exclusions from the disposal tax are also provided for (1) the disposal of any waste in the course of carrying out a removal or remedial action under CERCLA, provided that the disposal or storage is carried out in accordance with a plan approved by EPA or the State, and (2) any waste removed from a facility listed on the National Priorities List.

Procedure and administration

Liability for tax.—The tax would be imposed on the owner or operator of the qualified hazardous waste disposal facility (generally in the case of hazardous waste disposal), or the owner or operator of the hazardous substance handling or treatment facility (generally in the case of releases of hazardous substances). In the case of disposal at an off-site facility, the tax would be imposed at the time that the owner or operator of the facility signs (or is required to sign) the manifest or shipping paper accompanying the hazardous waste. In the case of onsite facilities, the tax would be imposed at the time at which the description and quantity of the hazardous waste are entered, or required to be entered, in the operating record.

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[25] Thus, under this definition, the emission of hazardous waste into the atmosphere would constitute a taxable disposal.

[26] The latter two terms would be defined by reference to the regulations under sec. 3005 of the SWDA.

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Credit for prior tax.—The amendment provides that, if a person pays tax on the long-term storage of a hazardous waste,[27] and the same person subsequently disposes of the waste, a credit would be allowed against the otherwise applicable disposal tax for any tax previously paid on the storage of the waste. If a person pays tax on the long-term storage of a waste and subsequently delivers that waste to another person, who is the owner or operation of a qualified disposal facility, a credit would be allowed to the first person against any tax subsequently due from that person on the disposal or long-term storage of a hazardous waste.[28]

Information reporting.—The amendment would require any person who disposes of hazardous waste subject to the tax (or stores such waste for the year or more) to keep records and comply with rules and regulations established by the Treasury Department to ensure proper assessment and collection of the tax. The Treasury Department would be directed to consult with EPA to ensure that records, statements, and returns for tax purposes be consistent, to the extent possible, with reports required to be submitted to EPA under the Solid Waste Disposal Act. As part of this coordination, the Treasury could require any generator, transporter, disposer, or long-term storer of hazardous wastes to submit to the Treasury copies of records or reports required under the SWDA, the Marine Protection, Research and Sanctuaries Act, the Clean Air Act, the Clean Water Act, the Atomic Energy Act, the Uranium Mill Tailings Radiation Control Act, the Toxic Substances Control Act, or the Safe Drinking Water Act.

Allocation to Superfund

Revenues from the tax (technically, amounts equivalent to these revenues) would be allocated to the Superfund under the appropriate provision of CERCLA.

Effective date

The tax would be effective for hazardous waste received for disposal or placed into long-term storage on or after January 1, 1986 (i.e., on a prospective basis only).[29]

Study

The amendment would require the Secretary of the Treasury, in consultation with the EPA Administrator, to submit to Congress not later than January 1, 1987, and annually thereafter through 1989, (1) a report on the amount of revenues being collected by the environmental toxics tax imposed under the amendment, and (2) the Secretary's recommendations (if any) for changes in the tax. These would include recommended changes in order to (a) raise the amount of revenue originally anticipated from the tax, (b) ensure that the tax is discouraging the environmentally unsound disposal of waste, and (c) ensure that the tax is being collected with maximum administrative feasibility. The Treasury Secretary would further be required to study and recommend to Congress whether tax should be imposed on (1) releases of certain pesticides identified under the Federal Insecticide, Fungicide, and Rodenticide Act, and (2) chemicals which, according to the International Agency For Research on Cancer, have substantial evidence of carcinogenicity.

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[27] The amendment does not specifically impose tax on the long-term storage of hazardous waste; however, it is understood that such a tax is intended.

[28] For purposes of implementing these rules, in the case of fungible wastes, a "last-in first-out" presumption would apply.

[29] The amendment does not contain a specific termination date for the tax; however, the trust fund itself would be extended for five years only (i.e., through September 30, 1990). Additionally, authority to collect all Superfund taxes would expire when aggregate revenues during the reauthorization period reached $7.5 billion.

Corporate net receipts tax

General rules.—The amendment would impose a 0.014 percent tax on the net receipts of any corporation in excess of $75 million for any taxable year. Net receipts would be defined as the excess (if any) of gross receipts over the costs of goods sold by the taxpayer for the taxable year.

For purposes of the net receipts tax, all members of a controlled group of corporations[30] would be treated as one taxpayer. A similar rule would apply, under Treasury regulations, to trades or businesses (whether or not incorporated) which are under common control. The tax would apply to an unrelated business (within the meaning of Code sec. 512) of a tax-exempt orgnaization to the extent that net receipts from unrelated trades or businesses exceeded $75,000,000.

Effective date.—The net receipts tax would be effective for taxable years beginning after December 31, 1985.

Termination date.—The tax would not apply to any taxable year beginning after December 31, 1990. Authority to collect the petroleum, feedstock chemical, waste end and corporate net receipts taxes would terminate earlier if total Superfund revenues during the reauthorization period equal or exceed $7.5 billion.

Allocation to Superfund.—Revenues from the net receipts tax (technically, amounts equivalent to these revenues) would be deposited in the Superfund.

Study of imported derivatives tax

In connection with extending and expanding the chemical feedstocks tax, the amendment would direct the Treasury Department to study the economic effects of the feedstocks tax and the feasibility and desirability of imposing a tax on imported derivatives of substances subject to the tax. This study would be required to develop the methodology for selecting the list of substances and to list the substances which would be subject to such a tax and their corresponding item numbers in the Tariff Schedules of the United States. The International Trade Commission ("ITC") would further be directed to study the trade effects of the feedstocks tax with and without a tax on imported derivatives and the means of making a tax on derivatives compatiable with current international trade agreements. The Treasury would be required to submit the list of potential taxable substances by March 1, 1985, and the full Treasury report would be due June 1, 1985. The ITC report would be due 4 months after the Treasury list is submitted.

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[30] Determined using a 50-percent test and without regard to the special rules regarding insurance companies (sec. 1563(a)(4)) and tax-exempt employees' trusts (sec. 1563(e)(3)(C)).

C. S. 596 (Sen. Bradley)[31]—"Superfund Extension and Improvement Act of 1985"

Overview

S. 596 ("The Superfund Extension and Improvement Act of 1985"), introduced by Senator Bradley, is intended to provide $7.5 billion of financing for the Superfund over a five-year period. Financing is derived from three primary revenue sources: (1) an extension of the petroleum and feedstock chemicals taxes at present law rates; (2) a waste end tax identical to that provided in S. 14, introduced by Senators Moynihan and Bentsen; (3) a net receipts tax on corporations with annual gross revenues in excess of $50 million. Financing would also include $44 million per year of general revenue appropriations. The non-tax aspects of the bill are generally identical to S. 51, as reported by the Committee on Environment and Public Works (discussed in section IV, above); however, the bill would also include a target cleanup schedule for Superfund sites.

Petroleum and feedstock chemicals taxes

The bill would extend the petroleum and feedstock chemicals taxes at their present law rates, from October 1, 1985, through September 30, 1990. These taxes would terminate earlier than September 30, 1990, if the Secretary of the Treasury, in a manner prescribed by regulations, reasonably estimates that the sum of the amounts received in the Treasury by reason of the petroleum, feedstock chemicals, and waste end taxes will equal or exceed $7.28 billion.

Waste end tax

A waste end tax identical to that included in S. 14 would be imposed under the bill (see description of S. 14 above). This tax would be effective from January 1, 1986, through September 30, 1990.

Corporate net receipts tax

Imposition of tax.—The bill would impose a tax on the net receipts of any corporation which has a gross receipts in excess of $50 million for any taxable year. The tax would be imposed at a rate of 0.083 percent of taxable net receipts, defined as the excess (if any) of gross receipts over the cost of goods sold by the taxpayer for the taxable year. The method for determining cost of goods sold for purposes of this tax would be established by Treasury regulations.

For purposes of the net receipts tax, all members of a controlled group of corporations would be treated as one taxpayer. A controlled group would be determined using a 50-percent test without regard to the special rules regarding insurance companies (sec. 1563(a)(4)) and tax-exempt employees' trusts (sec. 1563(e)(3)(C)). A similar rule would apply, under Treasury regulations, to trades or businesses (whether or not incorporated) which are under common control. The tax would apply to unrelated business taxable income (within the meaning of Code sec. 512) of a tax-exempt organization, but only when gross receipts from unrelated trades or businesses exceeded $50 million.

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[31] As a result of a clerical error, an identical bill was also introduced as S. 607.

Effective date.—The net receipts tax would be effective for taxable years beginning after December 31, 1985.

Termination date.—The tax would not apply to any taxable year beginning after December 31, 1990.

Trust fund provisions

The trust fund provisions of the bill are identical to those of S. 51, as reported by the Committee on Environment and Public Works (see description of S. 51 above.) Thus, the bill would authorize general revenue appropriations to the Superfund of $44 million per year for fiscal years 1986 through 1990 and would retain the present law Superfund expenditure purposes.

The bill would termiante the authority to collect all Superfund taxes when, and if, cumulative Superfund revenues (not including interest, cost recoveries, and fines) during the reauthorization period total $7.5 billion.

Non-tax provisions

The non-tax provisions of the bill are similar to S. 51, as reported by the Committee on Environment and Public Works. However, the bill also includes a specific cleanup schedule for Superfund sites, which sets a goal of completing remedial action at all facilities listed on the National Priorities List (as of the date of enactment), to the maximum extent practicable, within five years. This would be accomplished by commencing remedial investigations and feasibiliity studies for these facilities at a rate of 130 or more facilities per year, and commencing actual remedial actions, at an equivalent rate, beginning at 1986. The bill would also set a goal of adding 1,600 new facilities to the National Priorities List by January 1, 1988, with investigations and studies of these sites being conducted at a target rate. Finally, the bill would require that preliminary assessments of all facilities listed on the Emergency and Remedial Response Information System (ERRIS) list as of the date of enactment be completed by January 1, 1987.

D. S. 886 (Sen. Proxmire)—"Hazardous Waste Reduction Act of 1985"

Overview

S. 886 ("The Hazardous Waste Reduction Act of 1985"), introduced by Senator Proxmire, would impose a tax on all forms of land and ocean disposal of hazardous waste which are regulated by the Resource Conservation and Recovery Act (RCRA). The tax would be imposed at a rate of $20 per ton on disposal methods other than injection wells, which would be taxed at a $5 per ton rate. Hazardous waste rendered nonhazardous within one year of receipt at a treatment, storage, or disposal facility would receive a full credit for the tax paid on such waste. The tax is intended to raise $286 million per year, as part of a comprehensive Superfund financing package. The tax is intended to create economic incentives for the treatment, as opposed to land disposal (other than underground injection), of hazardous waste.

Imposition of tax

The bill would impose tax on (1) the receipt of taxable hazardous waste in any qualified hazardous waste management unit, (2) the receipt of taxable hazardous waste for export or for ocean disposal (pursuant to a permit under section 102 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1412)), and (3) the placement of any hazardous wastes in any other facility or location. Taxable hazardous waste would mean hazardous waste (including "toxic" and "characteristic" waste) that is identified or listed under section 3001 of the Solid Waste Disposal Act (SWDA) as of the date of enactment of the bill, and which is not thereafter delisted. The term "hazardous waste" would have the same meaning provided by section 1004 of the SWDA and the regulations thereunder. Thus, substances (including household wastes) which are not treated as hazardous wastes under section 1004 would not be subject to tax. If EPA lists or identifies additional hazardous wastes under section 3001 of the SWDA after January 1, 1985, then EPA would be required simultaneously to transmit to Congress recommendations concerning the taxation of such waste.[32]

A qualified hazardous waste management unit is defined as (1) the structure in or on which hazardous waste is placed, which structure isolates the hazardous waste within a qualifying treatment, storage, or disposal facility, or (2) if the waste is not placed in or on a structure, the smallest area of land on or in which hazardous waste is placed. Qualifying facilities are defined as those operating pursuant to a permit or interim status under sec. 3005 of the SWDA, or under the an equivalent State program authorized by sec. 3006 of that Act.

The tax would not apply to placement of hazardous waste on the premises of the person generating the waste, if the wastes are held for a period shorter than that which would require the generator to obtain a permit under the SWDA (generally 90 days). Further, this tax would not apply to a waste generator who generates less than 100 kilograms of hazardous waste in any calendar month (small quantity generators). In addition, the tax would not apply to facilities or locations (including wastewater storage or treatment tanks) which are exempt from the permit, interim status, and manifest requirements under subtitle C of the SWDA, as in effect on the date of enactment of the bill.

Tax rates

General rate.—The tax would be imposed at a rate of $20 per ton for taxable hazardous waste disposed of by any method other than underground injection. This rate would apply to all other forms of land disposal or storage (including landfills, surface impoundments, waste piles, and land treatment), as well as to treatment facilities which do not render waste nonhazardous within one year of receipt (see discussion of exemptions from tax, below). The $20 per ton rate would also apply to export or ocean disposal and to the placement of taxable hazardous waste at non-RCRA facilities, including hazardous waste treated or disposed of in violation of RCRA permits.

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[32] The bill further specifies that, in the case of solid wastes required to be studied under section 8002(f) or (p) of the SWDA, no tax could be imposed unless provided by legislation.

Special rate for underground injection.—A $5 per ton tax rate would apply to taxable hazardous waste injected into an underground well that is operating pursuant to a permit (or interim status) under the SWDA, and for which a permit is also in effect under part C of the Safe Drinking Water Act. The term "underground injection well" has the same meaning as in the Safe Drinking Water Act and the regulations promulgated thereunder.

Adjustment of tax rates.—The bill directs the Treasury Department to adjust tax rates, beginning in 1986, if necessary, to ensure the receipt of anticipated revenues. Under this provision, before October 1, 1986 and each subsequent year of the reauthorization period, the Treasury would be required to estimate the actual amount of revenues to be derived from the tax during the fiscal year beginning that October 1. (These estimates could be based on the prior experience of the tax, together with other relevant information.) If the estimated fiscal year revenues are less than $286 million, Treasury would be required to increase the tax rates for that fiscal year by a percentage which Treasury estimates would result in $336 million of revenues during the fiscal year. This adjustment would apply proportionately to the general $20 tax rate and the $5 tax rate for disposal by underground injection.[33]

Exemptions from tax

As indicated above, various categories of wastes (including small generator wastes, mining wastes, temporarily stored hazardous wastes, and effluents discharged under Clean Water Act permits) would be excluded from the definition of taxable hazardous waste under the bill. The bill also provides the following exemptions from otherwise applicable tax:

Treatment or conversion of hazardous waste.—An exemption from tax (or a credit for tax paid) would be allowed for the qualified treatment or conversion of taxable hazardous waste which is completed within one year of after the first taxable receipt or placement of the waste.[34] Qualified treatment or conversion would include any method, technique, or process which changes taxable hazardous waste into a substance which is no longer a taxable hazardous waste. The exemption would not apply to the application of waste onto, or its incorporation into, the soil surface ("land treatment"), or to any method which violates any substantive requirement of Federal or State law relating to the management of taxable hazardous waste, including requirements relating to dust suppression and to hazardous waste used as a fuel. The exemption also would not apply to qualified wastewater treatment facilities; these facilities are the subject of a separate exemption (discussed below).

The treatment or conversion exemption would generally take the form of a credit (or refund) for tax paid by the person accomplishing the treatment or conversion at the time that the hazardous waste was originally received at the qualified management unit (assuming that no previous credit is allowable to the same person for the same waste). This credit (or refund) would be allowed in the same manner as for an overpayment of the tax. If the qualified treatment or conversion is completed before the time for payment of tax, no tax would be imposed on the relevant waste.

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[33] The adjustment to a $336 million revenue level appears to be designed to compensate for earlier revenue shortfalls and to ensure that aggregate revenues are at least equal to the originally intended level.

[34] The Treasury would promulgate rules for applying the one-year limitation to fungible hazardous waste.

Wastewater treatment facilities.—An exemption would be provided for certain wastewater treatment facilities that have a permit in effect under section 402 of the Clean Water Act, and that are required to comply with ground water monitoring requirements generally applicable to facilities permitted under section 3005(c) of the SWDA. A qualified wastewater treatement facilities is defined as a surface impoundment which contains treated wastewater during the secondary or tertiary phase of biological treatment, or which holds treated wastewater between treatment and discharge. Effective November 8, 1988, this exemption would be limited to facilities that are in compliance with the minimum technological requirements of the SWDA (sec. 3004(o)(1)(A)), or that meet the SWDA requirements relating to interim status surface impoundments.

Certain Superfund responses.—No tax would be imposed on the receipt or placement of hazardous waste in the course of carrying out any removal or remedial action under CERCLA, provided that (1) the removal or remedial action is carried out in accordance with a plan approved by the EPA or the State, and (2) the release or threatened release which caused the removal or remedial action occurred before October 1, 1985.

Movement from closed interim status facilities.—No tax would be imposed on waste removed from a facility operating with interim status under the SWDA, if such removal is pursuant to an EPA order closing the facility, and the waste is subsequently received at a facility holding a permit under the SWDA (or an equivalent State program).

Procedure and administration

Liability for tax.—The tax would be paid by the owner or operator of a qualified hazardous waste management unit; by the person holding the permit for ocean disposal under section 102 of the Marine Protection, Research, and Sanctuaries Act of 1972; or, in the case of export, by the person exporting the taxable hazardous waste. In the case of other placements of taxable hazardous waste, tax would be imposed on the person placing the waste in the relevant facility or location.

Timing of payment.—The tax would be due at the close of the calendar quarter during which the waste became subject to tax.

Credits for prior payment.—Under Treasury regulations, if tax is imposed with respect to any waste, and a second tax is subsequently paid upon the receipt of the waste at a qualified management unit (or paid for wastes that are exported or burned at sea), then a credit or refund would be allowed to the person who paid the first tax. The amount of this credit would be limited to the lesser of the tax imposed on the first taxable event or the tax paid by reason of the second event. Such a credit (or refund) would be treated in the same manner as an overpayment of tax; however, no interest would be paid on credited (or refunded) amounts.

If tax is first imposed upon the receipt of taxable hazardous waste at a surface impoundment, and the waste is later received at an underground injection well, a credit (or refund) would be allowed for the amount by which the tax imposed upon receipt at the surface impoundment exceeds the tax paid upon receipt at the underground injection well (i.e., $15 per ton at the unadjusted tax rates). Thus, the net tax on waste stored for more than a year prior to underground injection would be $10 per ton ($20 plus $5 minus $15).

Credits or refunds would also be allowed where tax is paid with respect to waste later subjected to qualified treatment or conversion processes (see discussion of treatment or conversion exemption above). This credit would not be allowed to duplicate an earlier credit received under the rules described in the preceding paragraphs.

Information reporting and recordkeeping requirements.—The bill would require persons subject to tax to keep records and to comply with rules and regulations prescribed by the Treasury Department to ensure proper assessment and collection of the tax. The Treasury would be directed to consult with the EPA and the Army Corps of Engineers to ensure that records, statements, and returns for tax purposes are consistent, to the extent possible, with the reports required to be submitted to the EPA under the Solid Waste Disposal Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act of 1972. As part of this coordination, the Treasury could require any person who is required to maintain records under those Acts to submit copies of such records (or reports) or otherwise to make them available to the Treasury.

Allocation to Superfund

Revenues from the tax (technically, amounts equivalent to these revenues) would be deposited in the Superfund under the appropriate CERCLA provision.

Effective date

The tax would be effective for hazardous waste received, placed, or exported on or after January 1, 1986.

Termination date

The tax imposed by the bill would expire on September 30, 1990.

Studies

The bill would require the Secretary of the Treasury to submit to Congress, not later than April 1, 1986, a report on the implementation of the waste end tax. Additionally, not later than January 1, 1987, the Secretary of the Treasury would be required to submit to Congress recommendations (if any) for a waste end tax that would (1) raise $286 million per year, and (2) be designed to discourage the disposal of hazardous wastes in an environmentally unsound manner (and to accomplish this with maximum administrative feasibility).

E. S. 955 (Sens. Mitchell and Chafee)—"Superfund Revenue Act of 1985"

Overview

This bill is intended to raise $7.5 billion for the Superfund (not including interest and recoveries) over a five-year period, from the following revenue sources: (1) an extension of the petroleum tax (Code sec. 4611) at a 1.13 cent per barrel rate; (2) an extension of the chemical feedstocks tax (sec. 4661) on the same taxable substances as under present law, but at higher rates that are indexed for inflation (beginning in 1986); (3) a single-rate tax on the treatment, storage, disposal, or export of hazardous waste (also indexed for inflation); and (4) a tax on corporate earnings and profits (as defined by the bill) in excess of $5,000,000 per year. Superfund financing would also include $187.5 million per year of general revenue appropriations.

Petroleum tax

The bill would increase the present law environmental excise tax on petroleum from 0.79 cents per barrel tax to 1.13 cents per barrel, effective from October 1, 1985. This tax would apply through September 30, 1990.

Tax on feedstock chemicals

Tax rates

The bill would impose tax on the same chemical feedstocks that are taxed under current law (sec. 4661). However, tax rates would be set at the lower of 1½ percent of estimated wholesale price or $5.35 per ton, in accordance with the following table (Table 9):

Table 9.—Chemical Tax Rates Under Present Law and Proposed Rates Under S. 955

[Tax rates per ton, before any inflation adjustment]

Substance	Present law	Proposed rates
Organic substances:		
Acetylene	$4.87	$5.35
Benzene	4.87	5.35
Butadiene	4.87	5.35
Butane	4.87	4.87
Butylene	4.87	5.11
Ethylene	4.87	5.35
Methane	3.44	3.44
Napthalene	4.87	5.35
Propylene	4.87	5.35
Toluene	4.87	5.14
Xylene	4.87	5.35
Inorganic substances:		
Ammonia	2.64	2.64
Antimony	4.45	5.35

Table 9.—Chemical Tax Rates Under Present Law and Proposed Rates Under S. 955—Continued

[Tax rates per ton, before any inflation adjustment]

Substance	Present law	Proposed rates
Antimony trioxide	3.75	5.35
Arsenic	4.45	5.35
Arsenic trioxide	3.41	5.35
Barium sulfide	2.30	5.35
Bromine	4.45	5.35
Cadmium	4.45	5.35
Chlorine	2.70	3.03
Chromite	1.52	1.52
Chromium	4.45	5.35
Cobalt	4.45	5.35
Cupric oxide	3.59	5.35
Cupric sulfate	1.87	5.35
Cuprous oxide	3.97	5.35
Hydrochloric acid	0.29	0.93
Hydrogen fluoride	4.23	5.35
Lead oxide	4.14	5.35
Mercury	4.45	5.35
Nickel	4.45	5.35
Nitric acid	0.24	3.03
Phosphorus	4.45	5.35
Potassium dichromate	1.69	5.35
Potassium hydroxide	0.22	5.35
Sodium dichromate	1.87	5.35
Sodium hydroxide	0.28	2.79
Stannic chloride	2.12	5.35
Stannous chloride	2.85	5.35
Sulfuric acid	0.26	0.77
Zinc chloride	2.22	5.35
Zinc sulfate	1.90	5.35

Starting in 1986, the rates specified in the table would be adjusted for inflation. In the case of organic substances, the inflation adjustment for any year would be the percentage by which the average producer price index for basic organic chemicals, for the 12-month period ending in September of the preceding year, exceeds the comparable average of the index for the 12-month period ending in September 1984. In the case of inorganic substances, the inflation adjustment for any year would be the percentage by which the average producer price index for basic inorganic chemicals for the 12-month period ending in September of the preceding year, exceeds the comparable averages for the 12-month period ending in September 1984.[35]

Effective date

The amendments to the tax on feedstock chemicals would be effective on October 1, 1985.

Termination date

The tax would expire on September 30, 1990.

Tax on hazardous waste

Imposition of tax

The bill would impose a tax on (1) the receipt of hazardous waste at any qualified hazardous waste facility, and (2) the export of hazardous waste.

Hazardous waste subject to the tax would include any waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (SWDA) as in effect on the date of enactment of the bill, other than waste the regulation of which has been suspended by Congress.

Qualified hazardous waste facilities would mean any facility (including disposal and other facilities): (1) which qualifies for authorization to operate under section 3005(e) of the SWDA, *or* (2) which has a valid permit under section 3005 of that Act (or a State program authorized by section 3006 of the SWDA).

Tax rates

The tax would be imposed at a flat rate of $3.65 per metric ton (approximately 1.1 English tons) of hazardous waste subject to the tax.

The tax would generally be imposed on the full amount of waste received at a hazardous waste facility. However, in the case of onsite waste water treatment facilities, the taxpayer could elect to have tax imposed on the amount of hazardous waste generated at the site (which excludes non-hazardous materials added to the waste stream prior to treatment).

The tax rate would be adjusted for inflation, beginning in calendar year 1986, by increasing the $3.65 tax rate by the percentage (if any) by which the GNP implicit price deflator for the preceding calendar year exceeds the deflator for calendar year 1984.

Procedure and administration

Liability for tax.—The tax would be imposed on the owner or operator of the qualified hazardous waste facility, or, in the case of export, on the exporter of hazardous waste.

Avoidance of double tax.—The bill specifies that no tax is to be imposed upon the receipt or export of hazardous waste directly from one or more qualified hazardous waste facilities.

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[35] Tax rates would not be reduced below the levels shown in Table 9, even if the producer price index declines.

Effective date

The tax would be effective for hazardous waste received or exported after September 30, 1985.

Termination date

The tax would terminate on September 30, 1990.

Environmental tax on corporate earnings and profits

Imposition of tax.—The bill would impose an environmental tax equal to .003 (i.e., 0.3 percent) of corporate earnings and profits in excess of $5,000,000 in any taxable year. This tax would be imposed on all corporations other than S corporations, regulated investment companies (RICs), and real estate investment trusts (REITs).

In computing earnings and profits for purposes of the tax, no reduction would be allowed for any distribution made to a shareholder after September 30, 1985, with respect to the corporation's stock. If a corporation has an earnings and profits deficit for any taxable year after the effective date, then such deficit would be used to reduce its earnings and profits (if necessary below zero) for the next taxable year (i.e., perpetual carryforward).

The environmental tax on corporate earnings and profits would be in addition to, and independent of, any other tax. The tax could not be reduced by otherwise available income tax credits.

Effective date.—The tax on corporate earnings and profits would be effective for taxable years ending after September 30, 1985. For taxable years which include October 1, 1985, tax would be imposed on that portion of earnings and profits which is proportional to the number of days in the corporation's taxable year which falls after September 30, 1985.

Termination date.—The tax would not apply to any taxable year ending after September 30, 1990.

Trust fund provisions

The bill would allocate revenues from each of the taxes described above (technically, amounts equivalent to these revenues) to the Superfund, under the appropriate CERCLA provision. In addition, appropriations of $187.5 million per year would be authorized from general revenues, for fiscal years 1986 through 1990.

F. S. 957 (Sens. Bentsen and Wallop)—"Superfund Excise Tax Act of 1985"

Overview

This bill would impose a tax on the sale, lease, or import of tangible personal property by the manufacturer or importer of the property, with revenues from this tax being allocated to the Superfund. No tax would be imposed on manufacturers or importers with less than $100,000 of annual gross receipts from the otherwise taxable sale, lease, or import of tangible personal property. A credit against the tax would be allowed for a proportionate fraction of direct material purchases during the taxable year (i.e., the tax would function similarly to a value added tax). Exports of taxable property would be exempt, as would sales or imports by tax-exempt entities.

The rate of tax is not specified by the bill. The Secretary of the Treasury is required to determine the tax rate which would raise the amount of revenue necessary to finance the Superfund in any fiscal year.

Imposition of tax

The bill would impose tax on (1) the sale or leasing of tangible personal property in the United States, and (2) the importing of tangible personal property into the United States, by any taxable person in connection with a trade or business. The tax would be imposed upon the manufacturer of tangible personal property (in the case of sale or leasing) or (in the case of imports) on the importer of such property.

For purposes of the tax, "manufacturing" would be defined as activities in which labor or skill is applied by hand or machinery to produce a new, different, or useful substance or acticle of tangible personal property, including activities such as making, fabricating, processing, refining, mixing, and compounding. The bill further specifies that manufacturing is to include the production of raw materials. Manufacturing would not include services incidental to the storage or transportation of property; the incidental preparation of property by a retailer or wholesaler (including routine assemblage); or the production (i.e., growing, harvesting, etc.) of unprocessed agricultural products (except timber) or unprocessed food products.

The tax would be limited to manufacturers or importers with an aggregate taxable amount of $100,000 or more for the relevant taxable period (generally, the taxable year). For purposes of this rule, all members of affiliated groups of corporations (under sec. 1504(a)) would be treated as one taxpayer. Under Treasury regulations, all trades or businesses which are subject to common control (whether or not incorporated) would be treated as a single taxpayer.

Tax rate and taxable amount

The tax would be imposed on the sale price charged by the seller of property to the purchaser thereof, including all items payable to the seller, but excluding the tax imposed under the bill, and any separately stated transportation charges. In the case of leases, the tax would be imposed on gross lease payments received during the taxable period. Imports would be taxed according to their customs value plus customs and other duties. If no such value exists, then tax would be imposed on the fair market value. Any taxable amount would be treated as received at the time that the taxpayer would recognize such amount under its general method of accounting.

A credit would be allowed against the tax for purchases of direct materials during any taxable period.[36] This credit would be equal to the excess of (1) purchases of direct materials during the taxable period, over (2) the amount of such purchases divided by the sum of 1 plus the applicable rate of tax under the bill, with this excess further being reduced by an amount equal to the tax rate times $100,000. Excess credits under this provision would be treated as overpayments of tax arising on the due date of the relevant return (if later, the date on which the return is actually filed).[37]

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[36] The bill does not specifically define "direct materials." It appears that the term would include tangible personal property and raw materials used directly to manufacture taxable property and property that otherwise would be taxable for the export exemption. Taxpayers that sell or lease property for export could not include separately stated transportation charges in computing the credit.

The bill does not specify the applicable rate of tax. Tax would be imposed at the rate which the Secretary of the Treasury determines to be necessary to collect a sufficient amount of revenue to finance the Superfund for the fiscal year in question.[38]

Exemptions

No tax would be imposed on any property exported from the United States. Additionally, no tax would be imposed on the sale or importation of property (1) by the United States or any State or political subdivision (including the District of Columbia and U.S. possessions), or any agency or instrumentality thereof, or (2) by any organization that is exempt from Federal income taxation, except to the extent of transactions associated with an unrelated taxable businesses.

As indicated above, no tax would be imposed on persons having an aggregate taxable amount of less than $100,000 for any taxable period.

Procedure and administration

The taxable period for any taxpayer would generally be the taxpayer's taxable year for income tax purposes; if no such year exists, the calendar year would be used. A taxpayer could also elect to use a quarterly taxable period, or any other period allowed by Treasury regulations. The Treasury regulations could further require quarterly deposits of estimated tax for any taxable period. Returns would be due the first day of the second calendar month after the end of any taxable period (e.g., February 1 for a calendar taxpayer year).

Allocation to Superfund

Revenues from the tax (technically, amounts equivalent to these revenues) would be allocated to the Superfund under the appropriate CERCLA provision.

Effective date

The tax would be effective for taxable periods beginning after September 30, 1985.

Termination date

The bill does not provide a specific termination date for the manufacturer's tax. However, the Secretary of the Treasury presumably would set a zero rate of tax after Superfund revenue needs were satisfied.

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[37] It appears that the intent of this credit mechanism is to impose tax on value added in the manufacture of tangible personal property in excess of $100,000.

[38] Statements by the sponsors of the bill indicate that the tax rates would be determined legislatively, depending on the overall funding needs of the Superfund and the other taxes included in the funding base. See 130 Cong. Rec. S4410 (statement of Sen. Bentsen), S4412–4413 (statement of Sen. Wallop), April 18, 1985.

VII. ISSUES RELATING TO THE REAUTHORIZATION OF SUPERFUND

A. Funding Level of the Superfund Program

Two main issues which arise in considering the appropriate level of funding for the Superfund program are: (1) the ultimate cost of cleaning up all the sites which pose an environmental threat; and (2) the rate at which these sites should be cleaned up.

The Environmental Protection Agency ("EPA") recently estimated that the Federal cost of remediating all current and future sites on the National Priorities List will total $9.1–14.5 billion in 1983 dollars.[39] EPA's best estimate which incorporates the most likely assumptions and best available data is $11.7 billion. Some have argued that these estimates are too low because of optimistic assumptions concerning the total number of hazardous sites which exist and the proportion of these which will be cleaned up by private parties. The General Accounting Office has reviewed this estimate and concluded that the cost of cleanup could be as high as $26 billion.[40] The Congressional Office of Technology Assessment estimates that as many as 10,000 sites will require Superfund cleanup at an estimated cost of $100 billion over the next 50 years.[41] Thus there is at present a large amount of uncertainty about the level of Superfund expenditures required to clean the nation's hazardous waste sites.

The second issue related to funding levels is the rate at which the sites should be cleaned up. Hazardous waste cleanup projects require lengthy analysis, planning, preliminary engineering, and design work. This is particularly the case at sites where groundwater contamination is involved. Given the long lead time necessary for implementing site cleanups, the EPA has stated that it will not be able to spend productively more than $5.3 billion over the 1986–1990 period.

The Congressional Research Service ("CRS") analyzed a number of alleged obstacles to a more rapid program of hazardous waste cleanup including shortages of analytical laboratory capacity, experienced personnel, and permitted storage, treatment, and disposal facilities. CRS concluded that the main difficulty in accelerating the rate of Superfund cleanup is likely to be inadequate State matching funds rather than a lack of adequate laboratory capacity, personnel, or waste management facilities.[42]

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[39] U.S. Environmental Protection Agency, "Extent of the Hazardous Release Problems and Future Funding Needs CERCLA section 301(a)(1)(C) Study" (December 11, 1984), pp. 4–10.

[40] General Accounting Office, *EPA's Preliminary Estimates of Future Hazardous Waste Cleanup Costs are Uncertain, RCED-84-152* (May 7, 1984).

[41] U.S. Congress, Office of Technology Assessment, *Superfund Strategy*, (March 1985).

[42] U.S. Congress, Congressional Research Service, *Superfund: How Many Sites? How Much Money?* (March 6, 1985).

It has been suggested that given the uncertainty about the rate at which the Superfund can be spent, it may be desirable to terminate the Superfund taxes if a large balance builds up in the fund. The 1980 Act, for example, contains a trigger mechanism which temporarily suspends the feedstock tax if the Superfund balance exceeds $0.9 billion and would not fall below $0.5 billion in the subsequent year. This type of trigger could guard against excessive prepayment into the Superfund.

On the other hand, opponents of this type of trigger argue that it effectively would enable the EPA to control the level of Superfund taxes by manipulating the rate at which outlays are made from the Superfund. In addition, taxpayers would be less certain about their potential Superfund tax liability over the 5-year reauthorization period. It is also argued that without the assurance of adequate revenues, preliminary planning and design activities will be hampered, and the ultimate schedule of cleanup could be significantly delayed. Finally, given the lead time necessary to plan cleanup projects, the Superfund tax might be triggered off just as the demand for Fund resources sharply rises in the construction phase of the program.

B. General Revenue Share of Superfund Expenditures

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 established an excise tax on certain chemical feedstocks and petroleum as the primary revenue source for the Federal Superfund; through fiscal 1984, appropriations from general revenues have amounted to 12.2 percent of revenues from taxes and general appropriations. The Superfund was intended to cover the cost of cleaning sites only where liability could not be traced to a private party.

Payers of the feedstock tax have challenged the equity of this tax. First, the economic beneficiaries of the prior use of cheap waste disposal practices include: past customers of products fabricated in waste producing plants, past stockholders, and past workers. However, the burden of the Superfund feedstock tax falls on current customers, shareholders, and workers. Thus, there may be no direct connection between past beneficiaries of cheap waste disposal practices and the individuals who currently bear the burden of the feedstock tax. Second, companies who pay to remediate all sites for which they are responsible (whether voluntarily or under court order) are, in effect, taxed twice under the feedstock tax. Third, the current excise tax is assessed on chemical feedstocks rather than on the actual hazardous wastes which are commonly found in abandoned disposal sites. Companies outside of the chemical industry that generated these hazardous wastes are not directly taxed under current law. Even if the disposal of hazardous wastes were taxed, as some have suggested, there would be no direct link between current taxpayers and past waste disposers.

On these grounds, it can be argued that general revenues should finance a larger share of Superfund expenditures. Unlike many of the other trust funds supervised by the Treasury (e.g., the airport and airway, highway, and inland waterway trust funds), the payers of Superfund taxes do not directly benefit from the facilities which are built and maintained by the Superfund. In Western Europe, general revenue financing is the approach generally followed for funding the remediation of abandoned waste sites.

Advocates of the feedstock tax argue that it is appropriate and equitable to place the financial burden of cleaning up hazardous waste sites on the industries responsible for creating the problem.[43] This approach has been followed in other instances where Congress has made the judgment that responsibility for a present problem or condition more properly attaches to a particular segment of the economy rather than the entire body of taxpayers who provide general revenue. For example, under the Black Lung Benefits program, benefits to diseased coal miners and survivors are financed by an excise tax on current coal production. Also, under the Surface Mining and Reclamation Act, reclamation of former surface mining sites is financed by a fee on coal production. Finally, it is argued that in view of the size of the Federal budget deficit it would be irresponsible to finance a significant amount of hazardous waste cleanup from general revenues.

In light of the Federal budget deficit, as an alternative to general revenue appropriations, a number of broad-base tax alternatives have been proposed to finance a portion of the Superfund. These proposals include corporate taxes that would be computed on the basis of net receipts, manufacturing value added, and earnings and profits (see below). Such taxes would spread the cost of cleanup broadly over all corporations.

C. Chemical Feedstock Tax

CERCLA imposed an excise tax on 42 chemical feedstocks and on petroleum. The main criterion for determining which feedstocks would be subject to tax was the prevalence of hazardous wastes derived from these feedstocks. The basic feedstock tax rates were set at $4.87/ton for petrochemicals, $4.45/ton for inorganic chemicals, and $0.0079/barrel for petroleum.[44] These rates were necessary to achieve a $1.6 billion Superfund program over five years and to allocate 65 percent of the tax burden to petrochemicals, 20 percent to inorganic chemicals, and 15 percent to petroleum. This allocation was based on the respective proportions of derived wastes found in hazardous waste sites. In addition, the feedstock rates were limited to 2 percent of wholesale price (based on data available in 1980).

Exemptions were granted for methane or butane used as a fuel; ammonia, sulfuric acid, and nitric acid used in the production of fertilizer; sulfuric acid produced as a byproduct of air pollution control; and chemicals derived from coal. In addition, section 1019 of the Deficit Reduction Act of 1984 clarified that exemptions also would apply to specified feedstocks used in the production of certain fuels and transitory chemicals which occur in metal refining processes.

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[43] According to one study, the chemical and allied products industries are responsible for producing 84 percent of the contaminants found at national priority list sites. See: Management Analysis Center, Inc. *Financing Superfund: An Analysis of CERCLA Taxes and Alternative Revenue Approaches* (June 1984), p. 38.

[44] Compounds (e.g., arsenic trioxide) were taxed at a fraction of the rate imposed on their constituents (i.e., arsenic) based on percentage composition.

The feedstock tax has been criticized as being arbitrary and potentially damaging to industry. Under current law, feedstock taxes are not based on either the degree of hazard associated with wastes derived from these feedstocks or the volume of hazardous waste produced from these chemicals. Thus, it is argued that a tax on the disposal of certain hazardous wastes more equitably places the burden of the tax on the wastes which are being cleaned up by the Superfund.

On the other hand, proponents of the feedstock tax argue that it is successful in accomplishing the stated goal of financing the Superfund program through taxes paid by the industries that account for most of the problem which led Congress to establish the program. According to a report prepared for the EPA, 71 percent of all regulated hazardous wastes are produced by the chemical and petroleum refining industries which are the primary payors of the feedstock tax.[45] Most hazardous wastes or substances are made from the feedstocks subject to tax; the vast majority of those substances ranked highly hazardous at waste sites are taxed feedstocks or their derivatives.

D. Effect of Feedstock Tax on Trade

Under current law, imports of feedstocks are subject to tax, as are imports of petroleum and petroleum products, but imports of derivatives produced from taxed feedstocks are not subject to tax. It is argued that the the feedstock tax subsidizes imports derived from taxed chemicals, and encourages U.S. chemical companies to manufacture offshore. Imported products that are derived from feedstocks that would have been taxable if produced or sold in the Unites States escape tax and are, in effect, subsidized by the Superfund tax. For example, batteries consist mostly of lead and lead oxide. Lead oxide is a taxable feedstock; however, imported batteries are not taxed. Thus, disregarding transportation costs, imported automobile batteries (made with untaxed lead oxide) have a cost advantage over those produced in the United States. Similarly, exports of U.S.-produced batteries suffer from a cost disadvantage relative to foreign-produced batteries.

While the feedstock tax could, in theory, harm U.S. trade, it is unlikely that the actual damage to the U.S. chemical industry is large. The maximum tax imposed by current law on any chemical is 2.0 percent of the manufacturing cost estimated in 1980. By comparison, the value of the dollar against a group of 11 major foreign currencies increased by about 10 percent over the last 6 months of 1984, effectively raising the price of U.S. chemical exports by that amount.[46] While some segments of the chemical industry are highly competitive, the recent growth in petrochemical imports appears to be attributable largely to the appreciation of the dollar against foreign currencies and to competition from plants established near low cost sources of natural gas in the Middle East and elsewhere.[47]

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[45] Westat, Inc., *National Survey of Hazardous Waste Generators and Treatment, Storage and Disposal Facilities Regulated Under RCRA in 1981*, (April 1984).

[46] U.S. Congress, Congressional Research Service, Memorandum prepared for the House Committee on Energy and Commerce Subcommittee on Commerce, Transportation, and Tourism, (March 21, 1985), p. 7.

Since foreign manufacturers of chemical imports did not generate the wastes found in U.S. disposal sites, it is difficult to argue that they should pay to clean them up. (However, some chemical imports are used in manufacturing processes which generate hazardous wastes.) Without a doubt many environmental regulations (e.g., the Clean Water Act, the Clean Air Act, the Toxic Substance Control Act, the Solid Waste Disposal Act, the Occupational Safety and Health Act, etc.) raise the cost of manufacturing in the United States. However, Congress has not provided systematic trade relief to offset the effects of any such regulations or taxes which affect the costs of domestically produced goods.

Current law does not provide an exemption for feedstocks that are exported. Some argue that such an exemption is necessary to prevent U.S. producers of exported feedstocks from being adversely affected, vis-a-vis foreign producers of these materials, in their attempt to compete for the business of foreign purchasers. However, it can be argued that an export exemption would adversely affect U.S. purchasers of feedstocks, since they will have to compete against, for example, Canadian or Mexican manufacturers who would be able to purchase feedstocks on a tax-free basis. These foreign purchasers could ship derivatives back to the U.S. and set prices without having to take account of the tax paid with respect to U.S. purchasers and users of feedstocks.

E. Tax on Hazardous Waste

Several basic issues arise in the discussion of a tax on hazardous waste in the context of financing the Superfund program: incentive effects; predictability of revenues; administrative concerns; trade effects; and appropriate financing sources for the particular expenditures authorized under the program.

In analyzing the effects of proposed taxes on hazardous waste it is useful to distinguish between "disposal" and "generation" taxes. Under a waste disposal tax, wastes that enter the environment are subject to tax. Treatment, reclamation, and recycling of waste is exempt; however, residual wastes from these processes that enter the environment are subject to tax. Under a waste generation tax, the generation of waste, rather than its disposal, is subject to tax. S. 14 (Senators Moynihan and Bentsen) and S. 886 (Senator Proxmire) are structured generally as disposal taxes, while S. 955 (Senators Mitchell and Chafee) includes a generation-type tax on hazardous waste. The Administration's waste tax proposal can be viewed as a hybrid approach combining, in effect, a relatively low-rate generation tax on all hazardous waste with a surtax on certain types of disposal.

Incentive effects

A rationale for a disposal tax, like other pollution taxes, is that the market price of disposal does not reflect the full cost to society.

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[47] Data Resources, Inc., *Superfund and the International Competitive Position of the Chemical Industry*, testimony presented to the Subcommittee on Commerce, Transportation, and Tourism of the House Committee on Energy and Commerce, (March 21, 1985).

Even waste that is properly disposed of, in a facility regulated under the provisions of the Resource Conservation and Recovery Act (RCRA), may still pose some long-term risk to the public health and welfare. Accidental releases can occur in the transport of hazardous wastes and at disposal facilities. Property values around disposal facilities may be reduced. If the owner of a hazardous waste facility becomes insolvent, the cost of maintaining the facility is shifted to the government. Thus, in theory, disposal tax rates should vary with the degree of hazard associated with each type of waste and the environmental soundness of the disposal method employed. A disposal tax based solely on the social cost of waste disposal would generally exempt proper treatment and recycling of hazardous wastes and tax only the untreated hazardous residuals from these processes upon ultimate disposal.

A disposal tax, unlike a feedstock tax, has the effect of creating direct economic incentives for waste reduction and treatment. First, at the production level, there is an incentive to adopt manufacturing processes which generate smaller amounts of the more toxic, highly taxed wastes. Second, at the treatment stage, there is an incentive to recycle and otherwise reduce the volume of hazardous wastes which must be disposed. Finally, at the disposal stage, there is an incentive to use safer methods of waste disposal which are taxed at a lower rate. Thus, the tax, administered by the Internal Revenue Service, could supplement the environmental statutes administered by EPA in attempting to achieve environmental goals.

It is unclear, however, if adequate information exists about the degree of hazard of different wastes and the environmental soundness of alternative disposal methods to design a rational disposal tax. According to the Office of Technology Assessment (which supports the concept of a disposal tax) there is insufficient scientific data to determine whether deep well injection is a highly safe method of long-term disposal. A tax which provided lower tax rates or exemptions for certain types of treatment or disposal could increase the amount of waste flowing into less heavily taxed disposal and treatment methods. If these low tax rates and exemptions are based on inadequate scientific data, such a tax could actually increase the amount of environmental damage imposed on society by the disposal of hazardous waste. For example, under the Administration's proposal, deep well injection would in many cases be taxed at a lower rate than biological waste water treatment. The inability to define adequately hazardous wastes and to determine their relative harmfulness is the primary reason why countries such as France and Germany, which tax the discharge of pollutants into waterways, have not enacted taxes on hazardous waste disposal.

A waste generation tax would promote environmental policy by discouraging the generation of hazardous waste; however, unlike a disposal tax, it would not create an incentive or disincentive for any particular method of treatment or disposal. A waste generator's choice among treatment and disposal methods would be determined primarily by the costs of alternative technologies and EPA regulations, rather than by the tax Code.

Predictability of revenues

Twenty-three States currently employ or have employed some form of waste-based tax.[48] The General Accounting Office (GAO) recently studied the experience with waste-end taxes in New York, California, and New Hampshire, and concluded that [49]

> . . . the three states (1) have not collected the revenues they anticipated, (2) have not determined if the tax achieved its objective of encouraging more desirable waste management practices, and (3) were concerned that a similar federal tax may reduce state tax revenues or increase the incentive to illegally dispose of hazardous waste. In addition, GAO found that in order to implement similar federal waste-end taxes, more data are needed on the types and quantities of waste generated and the treatment, storage, and disposal methods used. These data are necessary to accurately estimate revenue, measure change in disposal practices, and assure compliance with the tax.

The revenue shortfalls in these States were 39 percent in California, 73 percent in New York, and 93 percent in New Hampshire. Florida replaced its waste-end tax with a feedstock tax in 1983 after discovering that administrative costs exceeded revenues.[50] The State experience with disposal taxes raises the issue that a revenue shortfall might also occur at the Federal level.

Part of the revenue shortfalls experienced at the State level are due to out-of-State disposal of wastes. This type of tax avoidance would not affect a Federal level disposal tax, except to the extent hazardous wastes are exported from the country. A second explanation is that most of the State disposal taxes have been enacted since 1980 and are relatively new. This "learning curve" syndrome may be responsible for the 80-percent revenue shortfall in the Federal disposal tax enacted in the CERCLA of 1980 to fund the Post-closure Liability Trust Fund.[51] A third cause of persistent revenue shortfalls is that the disposal tax creates incentives for waste management, both by legal and illegal means. California, in one year, experienced a 28-percent decline in reported waste, including a 66-percent decline in extremely hazardous wastes, after enacting a waste-end tax.[52] In combination with State level waste end taxes, a Federal disposal tax could raise the effective tax rate on disposal to the point where serious revenue shortfalls might occur at both levels of government.

At the State level, it appears that some of the hazardous waste reduction is due to "midnight" dumping, waste blending, questionable recycling and treatment operations, and under-reporting of waste volumes.[53] Under-reporting is particularly difficult to detect in the case of on-site disposal, since the waste producer and disposer are the same party. This could be a significant problem for a Federal waste-end tax because 96 percent of all hazardous waste are disposed of on site.[54] As a result, some argue that an improperly designed waste-end tax could seriously undermine compliance with the RCRA reporting requirements.

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[48] Fred C. Hart Associates, Inc. "CERCLA Funding Options," pp. 21–22.

[49] GAO, *State Experiences With Taxes on Generators or Disposers of Hazardous Waste* (May 4, 1984), p. ii.

[50] ICF, Inc. "Briefing on CERCLA Tax Alternatives," prepared for the Environmental Protection Agency, part II, p. 14.

[51] According to the most recent IRS data, the post-closure tax raised an average of only $1.5 million per quarter in the first two quarters of fiscal 1984 relative to fiscal year budget estimates of $8 million per quarter and projections of $25 million per quarter when the tax was enacted in 1980.

[52] ICF, Inc. "Briefing on CERCLA Tax Alternatives," part II, p. 20.

[53] *Ibid.*, pp. 18–19.

Ultimately, there may be a conflict between the two major goals of a disposal tax—the provision of revenue for the Superfund program and the encouragement of proper treatment of hazardous wastes. To the extent that the tax applies only to those disposal practices which cause environmental harm and is successful in discouraging such practices, the revenues generated by the tax will decrease. However, the experience with the Superfund program inidcates that the revenue needs for cleaning up old sites are likely to increase over time.

Hazardous waste generation is a considerably larger tax base than hazardous waste disposal (because waste that is treated is not excluded). Thus, to raise an equal amount of revenue, a lower rate of tax is required if waste generation, rather than disposal, is subject to tax. At a lower tax rate, a waste generation-type tax is less likely to result in midnight dumping, and other causes of revenue shortfall, than is a disposal-type tax. Also, tax revenues from a generation-type tax are likely to be more stable than a tax imposed on particular types of disposal, since it is more difficult for taxpayers to reduce waste generation than it is to change disposal methods.

Administrative concerns

Some have questioned whether the current RCRA regulatory system is adequate for assesssing, collecting, monitoring, and enforcing a waste-end tax. Notwithstanding the RCRA regulatory system, every State that has adopted a waste-end tax has found it necessary to develop a separate reporting system.[55] The GAO concluded that current data were inadequate for determining the cause of the revenue shortfalls in the State programs, and the extent to which illegal disposal practices may have increased as a result of taxing hazardous waste.

Another lesson from the State experience is the relative high administrative cost of hazardous waste taxes. The current Superfund tax is imposed on 42 feedstocks and collected from approximately 600 taxpayers. On the other hand, a hazardous waste tax might be imposed on more than 430 wastes regulated under RCRA, and collected from approximately 5,000 on-site and off-site hazardous waste disposal facilities.[56] The Internal Revenue Service would be required to develop complex regulations covering the hundreds of substances involved, and specifying the taxation of numerous recycling, treatment, and disposal practices.

Further, it is not clear to what extent the RCRA regulatory system is adequate to provide the framework for the administration of a tax. For example, liability for an excise tax generally depends on the occurrence of a taxable event, but the RCRA system is geared to the prevention of certain events (i.e., illegal disposals) which are prohibited under that law. It is unclear at what point legal treatment and/or legal disposal would require the payment of a tax. Some proposed versions of a waste disposal tax would distinguish among storage, treatment, and disposal for purposes of defining the taxable event and whether or not the tax ever applied to a given volume of waste. However, the distinctions among these activities under present law are not always clear.

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[54] Westat Study.
[55] ICF, Inc., "Briefing on CERCLA alternatives," p. 26.
[56] Ibid., p. 12.

In addition, since RCRA allows approved State programs to administer the Federal requirements, it is unclear to what extent a Federal tax based on RCRA ultimately would be administered by the States, which could vary in their definition of terms and administrative practices.

Also, there is considerable controversy over the RCRA regulations which define hazardous wastes and various management practices, as indicated in the following statement:

> Industry and environmentalists alike, unhappy with much of what they already see, have challenged numerous regulations and are involved with EPA in lengthy negotiations over the way those regulations should ultimately read. The states, which administer RCRA, are finding their efforts hobbled because promised federal aid has not materialized.[57]

The Congress in 1984 adopted amendments to the RCRA which, *inter alia*, control certain questionable treatment practices under current law and expand the number of generators subject to the statute. If a disposal tax is tied to RCRA statute, the delays and frequent changes and challenges to EPA's regulations could make it difficult for the Internal Revenue Service (IRS) to administer the tax and issue its own regulations.

There may be difficulty in administering a disposal tax where waste is stored or treated in several waste management units prior to ultimate disposal. To prevent double taxation it generally will be necessary to provide a credit for tax paid when waste is moved from one unit to another. Problems may arise where the rate of tax varies depending on the type of treatment unit. Also, some types of treatment (e.g., neutralization of acids by the addition of a basic compound) may increase the amount of waste material. This could result in a tax credit for a larger amount of waste than was originally subject to tax. Such difficulties generally would be avoided by taxing the generation of hazardous waste (regardless of the method of treatment or disposal) rather than the disposal of such waste.

Another issue is whether a waste disposal tax should be levied on a wet weight or dry weight basis. For example, since wastes injected into underground wells are very dilute (90-99 percent water) taxing disposal on a wet weight basis increases the share of the tax burden paid by underground injection relative to other types of land disposal (if the same tax rate applies to both). If desired, the higher water content of wastes injected into underground wells could be accounted for by lowering the tax rate.

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[57] *Chemical Week*, "Getting RCRA Under Control" (June 9, 1982), p. 36.

Some oppose taxing disposal on a dry weight basis because of the added administrative burden. The cost of determining dry weight content has been estimated to be on the order of $20 per barrel, and can be more than the tax liability. As a result, some small waste generators currently do not bother to determine the dry weight content of their wastes and pay the existing post-closure tax on a wet weight basis. This may put small disposers at a disadvantage relative to large disposers (who have more uniform waste streams and in-house laboratory facilities).

As a practical matter, it may be quite difficult to develop comprehensive regulations prescribing the method of testing each of the hundreds of hazardous wastes to determine accurately the water content. For example, evaporative methods do not work for volatile organic wastes, while the Karl Fischer titration procedure is ineffective for testing wastes which contain significant amounts of acids or aldehydes. The regulations would also have to specify the frequency of sampling for continuous waste streams because water content may be variable. For example, in many waste water treatment facilities the diluteness of the waste stream surges after it rains because storm water and hazardous waste share a common sewer system. Finally, the regulations will have to establish certification procedures for dry weight analyses so that Internal Revenue Service ("IRS") agents can audit effectively taxpayers' claims regarding the dry weight of their taxable wastes.

Trade effect

Like the feedstock tax, a waste-end tax raises the price of manufacturing certain products in the United States. This effectively taxes exports and subsidizes imports of such products. However, depending on the tax rate imposed, the impact of a waste-end tax on individual businesses may be larger than the feedstock tax. The feedstock tax in current law was designed to prevent an increase in production costs of more than 2.0 percent; however, a waste-end tax could amount to a much larger percent of manufacturing costs for products whose fabrication involves large volumes of hazardous wastes. For example, a 1983 survey of off-site disposal charges, prepared for the EPA, found that the cost of landfill disposal for bulk wastes ranged from $28 to $100 per metric ton, and the cost of land treatment ranged from $5 to $24 per metric ton.[58] Thus a tax of $10 dollars per ton on land disposal, approximately the rate proposed by the Administration, could raise the cost of landfill by 10 to 36 percent, and the cost of land treatment by 42 to 200 percent. Consequently, waste-intensive products could be priced out of the market by imports from countries which have few, if any, regulations governing the disposal of hazardous waste. In these cases, U.S. manufacturers might shut down production and possibly establish manufacturing operations in other countries with weaker environmental standards. While some would welcome the export of industries which produce large volumes of hazardous wastes, the cost to the U.S. economy in terms of jobs and income must be considered.

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[58] Booz-Allen, *Review of Activities of Firms in the Commercial Hazardous Waste Management Industry*, 1983, report SW-894.

Appropriateness of revenue source

One of the arguments for a waste-end tax is that under a feedstock tax, the burden of financing the Superfund program is not properly placed on many of the industries which produced the hazardous wastes which currently pose an environmental threat. It is argued that since a waste-end tax could be more highly correlated with the generation of wastes found at Superfund sites, it is a more appropriate tax base.

Opponents of a waste-end tax respond that this argument is not valid to the extent that a large volume of waste is not subject to the tax. Wastes which are exported, generated by small generators exempt from RCRA, or are municipal wastes might not be subject to the tax. To the extent the tax is tied to the existing RCRA regulatory system, disposal which falls outside that system would not be subject to the tax. Further, those companies currently disposing of waste may not be the same companies that generated the waste found in Superfund sites.

F. Post-closure Liability Trust Fund

Under current law, the Post-closure Liability Trust Fund transfers legal liability of owners and operators of private disposal sites to the Federal government, provided that such sites are operated and closed according to RCRA requirements, and the EPA determines, 5 years after closure, that there is no substantial likelihood of future release. In exchange for assuming such liability, a tax of $2.13 per dry-weight metric ton was imposed on the disposal of hazardous wastes at qualified facilities. In effect, the post-closure tax is in lieu of an insurance premium for the coverage of all future claims arising from health and property damage caused by a hazardous waste facility.

The Administration proposal would repeal the Post-closure Liability Trust Fund enacted in 1980. There are several arguments for repeal. First, no estimate has been made of the liability which ultimately could be transferred to the Federal government under this provision. This liability is unlimited, and is governed largely by State and local laws which could change and could cover such items as medical expenses, pain and suffering, and income losses. Thus, the amount of claims against the Fund could be extremely large, and there is concern that the Post-closure Fund will have adequate resources to compensate the victims of even a few releases. This could necessitate a large tax increase or use of general revenues to pay these claims. Second, it is argued that the transfer of liability to the government diminishes the incentive to make these facilities safe over the long run. Under the scrutiny of private insurers (to avoid liability attributable to CERCLA and State tort laws), it is claimed that facility operators would continually strive to increase safety in order to keep premiums low. Little assurance that a future damage is unlikely results from a lack of release during the first five years after closure. Further, because storage facilities do not pay the tax, a storage facility which switched its status to that of a disposal facility just before closure could transfer liability to the Fund without ever having paid the tax. Other such mismatches between the tax and eligibility for transfer or liability may be possible; for example, a facility with an interim status permit may be required to pay the disposal tax but, if it never receives a final RCRA permit, will never be able to transfer liability to the fund. In addition, the Post-closure Fund does not relieve waste generators and transporters from legal liability for damages caused by waste deposited at a hazardous waste disposal facility.

On the other hand, it is argued that adequate private insurance is not available to cover the long-term liability of operators and owners of waste disposal facilities. Non-sudden environmental impairment insurance policies may be cancelled without cause by the insurer and are written to cover claims made during the coverage period of the insurance (claims-made basis) rather than when pollution actually occurs (occurrence basis). Such a policy would not cover any claim filed after the termination by the insurer even if the damage resulted from a release which occurred when the policy was in force. Thus, repeal of the Post-closure Fund could leave the public without protection where a policy is cancelled without cause or a facility operator becomes insolvent. Only the Federal government, it is argued, is capable of fully insuring these risks.[59]

As an alternative to repeal, one possibility is to the limit the liability of the Post-closure Fund to sites where the owner and operator are insolvent or the liability of a private party cannot be established. This would have the effect of making the Post-closure Fund similar to the Superfund which covers the cost of cleanup where responsible parties cannot be identified. In addition, the Post-closure Fund would supplement the Superfund by covering liability for damages for medical costs, income losses, pain and suffering, and other items which would not be compensated by the Superfund.

G. Natural Resource Damage Claims

Under present law States and the Federal government may be compensated for damages to government-controlled natural resources, such as parks and wildlife. These damage payments are in addition to actual costs of cleaning up hazardous substances. The Administration proposal provides that the Superfund may not be used to pay these damage claims. It is argued that the present law provision diverts scarce funds from the principal purpose of the program, which is to clean up hazardous waste sites and thus prevent further damage to individuals as well as natural resources. Further, it is argued that this provision exposes the Federal government to enormous potential liabilities for which no estimates have been made. Because regulations for damage assessment have not yet been issued, only four States have filed damage claims; however, claims from these States total $2.7 billion. Once the provision is fully implemented, the amount of claims eventually could be much larger. Thus, the Administration viewed it as unwise to allow these amounts, which do nothing to promote cleanup of hazardous substances, to be paid from the Fund.

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[59] See Department of the Treasury, *The Adequacy of Private Insurance Protection under Section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, June 1983.

On the other hand, supporters of the current provision argue that the Superfund should be used to compensate all costs attributable to hazardous substance releases, and that cleanup costs are only a small part of the total costs which these releases impose on society. In many cases, governments whose natural resource are affected adversely will have to incur substantial expense to restore or replace these resources if they are not paid by the Fund, since solvent parties responsible for the damages often cannot be located. Of course, taxpayers finance these restoration or replacement expenditures through additional State and local taxes. Thus, if the Fund pays for these expenses, they are borne by the users and producers of chemicals and their derivatives rather than a broader group of taxpayers. Advocates of this provision argue that Fund payment of these damage claims results in a more equitable distribution of this burden.

H. Broad-base Tax Alternatives

Based on the Office of Technology Assessment Report and other studies indicating the enormous cost of ultimately cleaning all of the nation's serious hazardous waste sites, some have argued that either general revenues or a broadly based tax eventually will be necessary to finance the Superfund. A broad-base tax would likely cause less economic dislocation than an equal revenue tax on chemical feedstocks or hazardous waste disposal, the effects of which are concentrated in the chemicals industry.

The simplest broad-base Superfund tax alternative would be to impose a surtax on the existing income tax. (A corporate income tax surcharge of 10 percent was in effect during 1968 and 1969, and a surcharge of 2.5 percent was in effect in 1970.) However, it is argued that a surtax would be unfair because a number of corporations pay little or no corporate income tax under current law as a result of various tax preferences such as the investment tax credit and accelerated depreciation. Several alternative broad-base corporate income tax bases have been proposed: earnings and profits, net receipts, and manufacturing value added. Since these tax bases are extremely large, a very low tax rate would generate substantial revenue. Also, such taxes likely would produce relatively stable revenue compared to more narrow alternatives such as a tax on hazardous waste.

Tax on earnings and profits

S. 955, introduced by Senators Mitchell and Chafee, would impose an annual tax of 0.3 percent on corporate earnings and profits (before deducting distribuitions) in excess of $5 million. Earnings and profits, as defined in section 312 and in regulations, more closely reflect actual economic income than does taxable income since many tax preferences are disregarded. Another advantage of this proposal is that only a relatively small number of corporations would be liable for this tax (i.e., corporations with earnings and profits greater than $5 million). However, a disadvantage of this tax is that many corporations, including large corporation, do not currently compute earnings and profits on domestic operations on a regular basis. Thus, some additional recordkeeping might be required.

Tax on manufacturing value added

S. 957, introduced by Senators Bentsen and Wallop, would impose tax on valued added in manufacturing by corporations with over $100,000 of gross receipts. The tax would be similar to the value added taxes ("VATs") imposed in many Western European countries, except that it would not apply at the retail (or wholesale) level, and corporations would compute their tax liability using the "subtractive" rather than the "credit" method. Under the subtractive method, taxpayers deduct purchases of materials from sales of taxable commodities in computing their tax liability, rather than having to claim a credit for tax imposed on purchases of materials. Unlike the European-type VATs, the proposed tax does not allow a deduction for depreciation. Thus the tax base includes both pre-retail sales of manufactured goods and gross income from capital in the manufacturing sector. Consequently, tax is to some extent imposed on both consumption and gross income (i.e., profits plus depreciation) resulting from manufacturing.

One advantage of taxing value added is that, under the General Agreement on Tariffs and Trade ("GATT"), a VAT is regarded as a direct tax which may be rebated on exports and imposed on imports. Such border tax adjustmenets would minimize adverse trade consequences that might arise from Superfund taxes. A tax on manufacturers may also be regarded as an equitable method of financing the Superfund since most hazardous waste generation is associated with manufacturing operations. However, it could be argued that fairness would dictate that exports of manufactured goods not be exempted from Superfund tax because the production of goods for export generates the same amount of hazardous waste as the production of goods for domestic consumption.

A disadvantage of a value added tax is that it will impose additional recordkeeping and compliance costs. Under the manufacturing value added tax, unlike under current law, taxpayers would be required to separately account for (1) sales of manufactured goods, (2) exports, and (3) costs of goods sold attributable to taxable production. Treasury has estimated that implementation of a broad-base (credit method) VAT would cost $700 million per year and require 20,000 additional personnel. While the tax proposed in S. 957 is substantially narrower in scope than the VAT analyzed by the Treasury Department, administrative costs may nevertheless be significant.

Tax on net receipts

S. 596, introduced by Senator Bradley, would impose a tax of .083 percent on the net receipts of corporations with over $50 million of gross receipts. One advantage of taxing net receipts is that taxpayers are already required to compute net receipts for purposes of the corporate income tax so that compliance costs would be very low. Another advantage is that relatively few corporations would be subject to the tax: only about 10,000 corporations have gross receipts in excess of $50 million.

A disadvantage of the proposal is that the effect of the tax would be uneven across firms and industries. Rental and interest income are generally excluded in the calculation of net receipts and thus would be exempt from tax. Also inventory accounting methods differ between manufacturing and other sectors. Since cost of goods sold depends on the method of inventory accounting, the computation of net receipts (i.e. gross receipts minus costs of goods sold) will vary between industries. Some firms, such as utilities, do not maintain inventories. In such cases additional recordkeeping would be required. Further, the inventory regulations provide that the inclusion of certain items in costs of goods sold follows the accounting treatment on the firm's books. Thus, there could be inconsistent tax results under the net receipts tax depending on variations in income tax accounting practices.

STATEMENT BY SENATOR JOHN H. CHAFEE

I would first like to thank the Chairman of the Finance Committee, Senator Packwood, for scheduling hearings on the financing of the Superfund hazardous waste cleanup program. I am a member of the Senate Committee on Environment and Public Works, and that Committee has approved reauthorization of the Superfund program which expires October 1, 1985. I am delighted that the Finance Committee is moving forward with hearings on the financing of the program in a timely manner.

We have some very difficult choices to make in financing the Superfund. Cleaning up the abandoned hazardous waste sites is going to be much more costly than we originally anticipated. The Senate Committee on Environment and Public Works has approved a reauthorization of the program at a $7.5 billion level, and I think our job here in the Finance Committee is now to find the fairest and most appropriate mechanisms for raising this amount of revenue.

The original method for funding the Superfund was, as we all know, through a tax on certain chemical feedstocks and a contribution from the general revenues of the Treasury. Faced with raising substantially more revenue, I think it is fair to say that most of us feel we can look simply at these two revenue sources. We are going to have to look at other methods for raising the revenue necessary, and that is what I think these hearings are all about.

I have introduced, with my colleagues Senator Mitchell, a proposal for funding the Superfund from four sources. First, we propose to continue the current feedstock tax mechanism, but we change the rate structure so that it will raise approximately $400 million annually instead of the $300 million which it currently provides. Thus the chemical feedstock tax would contribute $2 billion over the 5 year period.

Second, we propose to continue the current Treasury contribution to the Superfund at the rate of 12.5 percent annually. Thus the contribution from general revenues would rise from its current level of $44 million a year, to $187.5 million a year. Third, we propose a new tax on the generation of hazardous waste to raise $1.5 billion over the 5 year period, or approximately $300 million a year. Finally, we propose a broad based tax on corporate economic income to raise $3.06 billion over the 5 year period.

Each one of these revenue sources has its problems. However, I think that the combination of sources will work to raise revenue in the last disruptive manner economically and with a minimal administrative burden on the affected parties and the Internal Revenue Service.

Briefly, the feedstock tax we propose would continue taxing the current list of feedstocks, but the tax rate would be capped at 1.5 percent of wholesale selling price of a substance or $5.35 per ton, whichever is lower. The maximum tax rate under current law of $4.87 per ton for organic feedstocks and $4.45 per ton for inorganic feedstocks. The tax on crude oil under our proposal would rise from .79 cents per barrel to 1.13 cents per barrel. All the tax rates will be indexed for inflation.

The proportion of tax paid by inorganic and organic substances under our bill will change. Inorganic substances will pay an increased proportion, up from their current share of 20 percent of the feedstock tax 27.6 percent. The organic substances will pay 57.4 percent, compared with the 65 percent they pay under current law. Crude oil will continue to pay 15 percent of the feedstocks revenues.

Our feedstock tax would increase the amount of revenue generated by this tax by approximately $100 million a year. This should not produce a negative impact on the chemical industry's balance of trade. Concern over creating competitive disadvantages for the chemical industry is one of the primary reasons we have not tried to raise all the needed revenues from the feedstocks tax, and the modest increase Senator Mitchell and I suggest should not produce a disproportionate economic burden on the petrochemical and metal processing industries.

According to the EPA Superfund study, the chemical trade surplus decrease which occurred between 1981 and 1983 was small relative to the overall deterioration in the U.S. trade balance, and more important, the U.S. has not lost market share in world chemical exports since the enactment of the Superfund. Despite the reduction in the balance of trade, the U.S. share of world chemical exports in 1983 was 17 percent, the highest in more than 10 years.

Factors other than the feedstock tax contributed to the decline in the balance of trade for the chemical industry, e.g. global recession, the strong dollar, decontrol of U.S. oil prices, etc. Thus the impact of our proposed increase in the feedstock tax should be insignificant. Under our proposal, 31 of the feedstocks will be taxed at less than 1.5 percent of the wholesale price.

We have continued the 12.5 percent contribution from general revenues on the theory that cleaning up these abandoned sites is a broad societal problem to which all taxpayers should make a contribution. In addition, contributions from appropriations should assure congressional scrutiny of the use of the Superfund.

The new waste generation tax is not my first choice for an additional source of revenue for the Superfund. Anyone who has not read the piece on hazardous waste taxes that is in the Joint Committee on Taxation's background pamphlet should do so as soon as possible. The pamphlet provides an excellent summary of the issues we need to consider if we are going to consider a tax on hazardous waste.

I am not a fan of hazardous waste taxes and have proposed this flat tax on the generation of waste as a lesser of two evils. The risks of developing improper waste management incentives, experiencing revenue shortfalls, creating an administrative nightmare and unexpected trade effects are all very real risks.

My experience as author and manager of the 1984 amendments to RCRA, the law under which EPA regulates hazardous waste management, convinced me that our state of knowledge about waste generation and disposal practices is woefully inadequate. It is inadequate to develop or to administer an incentive-based tax plan. If we accept some of the multi-tiered tax proposals that are designed to alter behavior, to favor treatment over land disposal, we run the risk of upsetting EPA's regulatory program.

Just last fall, the Congress enacted an extremely complex, detailed law that directs EPA to phase out unsafe land disposal practices. The last thing we need now is to inject the IRS into the process of defining what are acceptable waste management practices. That is EPA's job. We simply do not know enough to use the tax code as an effective supplement to EPA's efforts in this area.

The revenue we can raise with a tax on hazardous waste is hardly worth the risks. If we agree on the need to broaden the tax base for distributing the burden of financing the Superfund beyond the current feedstock and agree to develop some sort of broad-based tax, I will urge that we drop the waste tax idea altogether and make up the $300 million or so in the broad-based approach. If the Committee decides that it wants some sort of waste tax, an analysis of the issues and problems suggests that a simple across-the-board tax on generation, such as that included in Senator Mitchell's and my bill, is the best approach.

The broad-based tax which Senator Mitchell and I propose is a very small, three-tenths of 1 percent (.003) on corporate earnings and profits in excess of $5 million a year. Earnings and profits are a measure of a corporation's economic income based on actual expenditures and receipts without accounting for the special tax treatment rules in the Internal Revenue Code. Section 312 of the Internal Revenue Code already defines earnings and profits, so it is not a new concept for corporations.

Under existing tax law, corporations must keep track of their earnings and profits for the purpose of measuring the amount of earnings that are available for distribution to shareholders. As a practical matter, most large corporations do not keep detailed records of their earnings and profits because for most large corporations, shareholder distributions rarely approach the level of corporate earnings and profits. However, this is a calculation which can be made with relatively little administrative burden.

In summary, the bill which Senator Mitchell and I have proposed continues to depend in large part upon the petrochemical and metal processing industries for its tax revenue based on the sound reasoning that the hazardous waste problem can be directly traced back to the feedstock substances which produce most chemical products. That is a tax policy that should be continued. The petrochemical and metal processing industries will also contribute the bulk of taxes under our new waste generation tax. In recognition that more revenue is needed for the Superfund, and that we can not raise it all from one industrial sector, we have included contributions from general revenues and we have proposed a broad-based tax on corporate economic income.

I will save my detailed arguments for markup and I now look forward to hearing from our witnesses.

STATEMENT ON SUPERFUND BY MALCOLM WALLOP

This April, we celebrated the 15th Anniversary of Earth Day. In reviewing the issues and concerns discussed back at the first Earth Day, a researcher would not find any mention of hazardous wastes. It was not a problem of great public concern just 15 years ago. But, today toxic wastes have become one of the great environmental issues.

In response to the threat of hazardous wastes, we have enacted a number of federal laws, such as the one under consideration today, the Superfund program. It is a response to a new problem, and has had its share of growing pains. In many ways, the Superfund program is a textbook example of how we should, and should not, respond to national problems.

With Superfund, we have a program motivated by public anxiety, but not necessarily by public or private competence. EPA has been moderately funded to move on the clean up of priority hazards waste sites without a proper assessment of the toxic hazards of industrial wastes, without a failsafe technology, and without sufficient trained personnel in either the public or private sectors to deal with the assigned task.

Now, we are working on a 5 year reauthorization of the program. I would merely urge caution. We need to maintain a flexible program which develops in a responsible fashion to deal with the serious problem of toxic wastes. Merely rapidly inflating the program does not create a solution, but does have the potential for creating a monstrous problem.

Our role in this Committee is to ensure that we have a solid base to fund the program. Like many other aspects of the program, the funding is flawed. We have a narrow tax base which burdens only a handful of corporations. We also rely on nonexistent general revenues. Such a shaky financial base cannot be relied on to provide the funds for a serious toxic waste cleanup program. I have been working with Senator Bentsen on one alternative. I feel that our proposal is a superior source of funding. This hearing will provide an opportunity to learn whether we have developed a better mousetrap. I do hope that we can move forward in a manner which allows us to develop the expertise and understanding to deal with a very serious public problem.

STATEMENT OF SENATOR CHARLES E. GRASSLEY

Mr. Chairman, I appreciate the opportunity to hear from these distinguished witnesses this morning on the tax issues involved in the reauthorization of the hazardous substance response trust fund. With the expiration of the Superfund Program facing us on September 30, we are back again to the drawing table this session to come up with a fair tax plan which will provide the additional revenue that is needed to continue our involvement in the cleanup of hazardous waste sites.

Despite positive efforts that have been made since the enactment of the Superfund Program in 1980, I think most of us in Congress have been disappointed with the slow progress of the Environmental Protection Agency in addressing the evergrowing national priority list sites. Although 538 sites are currently on the list and another 248 were proposed in October, EPA estimates that the list will grow to 1,800 to 2,500 sites in the near term. Surely, there is great concern over the staggering resources which will be necessary from the Federal Government and industry to protect the public health from the hazards of abandoned toxic waste dumps. We must ensure that EPA not only maintains its managerial and financial commitments to the Superfund Program, but accelerates its efforts in every way possible.

I do have concerns, however, over the disagreement which has arisen as to the cost of the superfund cleanup and how quickly new revenues can be expended in a responsible manner. The administration is proposing to expand the program from its current authorization level of $1.6 billion to $5.3 billion over the next 5 years. The Senate Environment and Public Works Committee, on the other hand, has recommended the superfund be expanded to a $7.5 billion spending level. I feel that Congress will have to take care not to raise revenues faster than they can be spent to clean up our hazardous waste sits. The administration has pointed out that hazardous waste clean up projects require lengthy analysis, planning and engineering work. Given the long lead time necessary for implementing site clean ups, the EPA maintains it will not be able to spend more than $5.3 billion productively over the 1986–90 period. We should give serious consideration to this question and also to the extension of the 1980 trigger mechanism which terminates superfund taxes if large balances builds up in the fund.

Clearly, however, the most difficult decision facing the Senate Finance Committee is how to best fashion a fair and effective tax system to raise the substantial additional revenues needed in the Superfund Program. Many argue that the financial burden of cleaning up hazardous waste sites should be placed on industries responsible for producing hazardous waste and posing an environmental threat. Of course, there is no direct link between current taxpayers and past waste disposers, however, I feel that the superfund burden is more appropriately placed on industry rather than the taxpayers who provide general revenue.

We will have to carefully consider whether we should concentrate on disposal or generation taxes, which embody different incentive and trade effects, or a combination of both. We must also examine other broad-based tax alternatives proposed by my colleagues, which offer advantages of stable revenue and less economic dislocation in the chemical and petroleum industries.

These are tough questions that we will wrestle with in our effort to come up with a fair approach to the superfund reauthorization. I look forward to the insight to be shared by our witnesses as to their recommendations for superfund financing.

STATEMENT OF SENATOR LLOYD BENTSEN

Mr. Chairman, today we begin hearings on the financing of Superfund over the next several years.

No one quarrels with the need to correct and control the dangers of abandoned hazardous waste sites. At issue are such considerations as the timing of the program, the extent of the cleanup, who should pay and how revenues should be raised if no one can or will pay.

Some of these questions have been considered by the Committee on Environment and Public Works. This Committee must now determine how to raise the revenues. As we do this, it is important that we find a solution that is fair and equitable.

Loading the Superfund tax on a narrow base is not equity. It is time to face the reality that hazardous waste disposal is a societal problem, not an industry problem.

We all benefit from products like plastics and nylon—yet wastes are generated.

There is no question that the microchip and mini-computers benefit society—yet, wastes are generated.

As one example, I thumbed through the 291 potentially responsible parties at the Stringfellow hazardous waste site in California. Sure, I found companies like Atlantic Richfield on the list, but I also found Carrier, General Foods, Hughes Aircraft, Teledyne, and Xerox. And I found plating companies and metal finishers and vacuum truck services.

In short, the disposers of waste at Stringfellow were a wide cross section of the national economy—dramatically different from the targets under the narrow Superfund tax base.

Very often when we are faced with a societal problem we turn to general revenues. But, facing $200 billion deficits, I cannot endorse such an approach today.

Let's evaluate the option of increasing revenues by adding to the current feedstock tax. In theory, the producers of petrochemical building blocks should be able to raise their prices and pass the burden to downstream users. Eventually the increase would be shared by consumers—spread out over everything from artificial hearts to disposable diapers and farm products.

If theory mirrored reality, the tax would be scarcely noticed. But the American petrochemical industry is in decline—on the ropes—with sales and profits falling steadily because of OPEC competition.

Prices have fallen steadily since 1980. Industry profits have shrunk to a bare 1.24 percent of sales.

It is an understatement to say that imports have grown markedly. Imports have skyrocketed, cutting the petrochemical industry's net trade balance by nearly a quarter since 1980 alone.

In ammonia, for example, demand is projected to rise 2 percent this year. Yet production will fall 5 percent in the face of increased imports that have nearly doubled since 1982. Forty percent of all U.S. ammonia plants have shut down, and 43,000 jobs have been lost.

Unemployment is rising steadily. In the so-called Golden Triangle region of Texas in the area of Beaumont-Port Arthur, one in six petrochemical industry jobs have been lost since 1981.

Eight years ago, OPEC began to limit crude production to prop up prices. So they launched major petrochemical building products to exploit their cheap oil and natural gas feedstocks. As a result, the Saudi Arabia consortium Sabic is building 16 major new petrochemical plants. In 1984 and 1985, for example, Sabic added over 5 percent to world ethylene capacity—at a time when nearly 25 percent excess capacity in ethylene already existed.

These new plants are government controlled, and the governments are willing and able to undercut any competition by using state-owned oil and gas feedstocks.

OPEC provides crude to their refineries at $2.50 per barrel or more below world prices.

Here's what would happen if we increase the current feedstock tax, according to a Congressional Research Service evaluation released just last week:

A higher tax will raise petrochemical industry costs and reduce sales.

U.S. primary petrochemical producers will incur reduced profits and possibly losses.

Domestic output and employment will decline even further.

Imports will increase and foreign producers will exploit the weak U.S. industry and raise prices.

Production costs for six major primary petrochemicals studied will increase from 3 to 5 percent, even though they had had only a 1.24 percent pretax profit on sales from 1981-84.

The tax burden would not be distributed among chemical product customers. Indeed, the CRS report says that the entire tax will be borne by primary producers and intermediate petrochemical producers, with consumers paying none of it.

As an alternative, we could create a waste end or waste management tax. I have introduced a waste-end tax with Senator Moynihan, and others have introduced similar proposals. The administration now appears to use a waste management tax as the linchpin of its Superfund tax proposal.

Under the bill Senator Moynihan and I have introduced, the burden falls more heavily on the land disposal practices that have caused the problems. The revenue target is about $300 million per year.

I seriously question the $600 million per year target of the administration bill. I cannot speak with certainty about its details, but I believe it relies heavily on taxing water to provide its revenues.

If the water volumes are changed—or reduced—what happens to those revenues? Is such a proposal equitable with respect to the Superfund problem?

A waste end tax can be a useful component of a Superfund tax, but I doubt it can be the linchpin.

The inescapable conclusion is that new, broad-based revenue sources are needed.

I know that Senator Bradley has introduced a net receipts tax that would apply to large corporations. Senators Mitchell and Chafee have a proposal to use a minimum tax with a very low rate.

I am delighted to see these proposals. They clearly indicate the desire to find a broad-based revenue source.

Senator Wallop and I have also introduced legislation for a broad-based tax. What we call for is essentially a tax on sales of manufactured goods and raw materials from the point of production.

A Superfund tax should have a rational relationship to the problem. It should be fair, so that it does not give some companies competitive edges over other companies. Certainly, it should not encourage companies to move their operations abroad, or damage the ability of U.S. companies to compete abroad.

The Superfund excise tax that Senator Wallop and I propose meets these requirements.

It would apply the tax to imports of all manufactured and produced products. We would also exempt exports from tax, so that they can compete abroad.

Manufacturers will pay tax on their sales, and receive a credit for the tax paid on the material used. But they will not have to keep invoices or other records showing the tax paid. It will be enough to show purchases of the inputs. This calculation is already required for income tax purposes.

This mechanism may not be as theoretically correct as the credit mechanism used in the European value added tax, but it so close—and it is simple.

Another aspect of the bill that makes it simple is that there are not numerous exceptions as to what constitutes manufacturing. We did build in an exception for farmers, because of their lack of inventory records—but even that exception may be unnecessary depending on other aspects of the bill.

The rate will be very low—perhaps less than 10 cents per $100 of sales—so we can avoid making some of the fine distinctions that we might be faced with if the tax were designed to raise large amounts of general revenues.

In short, I think the bill that Senator Wallop and I have proposed is fair, simple and advantageous to U.S. companies competing in world markets.

On balance, our choices are harsh and limited. A major role for general revenue is impractical. Increases in the feedstock tax are inequitable and unwise. Waste taxes can play a role but not the pivotal role. The only real choice is developing a broad based revenue source.

STATEMENT OF SENATOR MAX BAUCUS

Mr. Chairman, I commend you for moving so expeditiously in holding this hearing. This committee's prompt action will assure that the Superfund Program is renewed before its expiration this September.

There is a widespread consensus in the nation that the problem of hazardous wastes constitutes an ongoing emergency and that the pace of cleanup must be accelerated. At the same time we are unsure of the exact size of the problem. Estimates range as high as $100 billion for total cleanup. We are learning the hard way that it is very expensive to pay for past insensitivity and past mistakes. But the longer we delay the worse the problem will become.

The program that comes to us is a reasonable one. It is neither as large as some would like, nor as limited as the administration would prefer. It represents a major step forward in our ability to identify, adequately analyze and begin cleanup of sites.

I and the other members of this committee who also serve on the Environment and Public Works Committee feel strongly about the Superfund Program. The bill reported out of the Environment and Public Works Committee is a good bill. Our challenge here in the Finance Committee is to design a reasonable financing mechanism for the program.

The cleanup of hazardous wastes is a national problem. The nature of the problem dictates that financing should be a multipart package:

First, a chemical feedstock tax. Such a tax currently provides the bulk of Superfund financing—approximately $300 million per year. The theory behind this approach when Superfund was created was to tax the first hazardous substance in the production line. This makes sense. However, an increase in this tax could have serious adverse consequences for the international competitiveness of our mining, petroleum and chemical industries. Therefore, I believe we must retain the chemical feedstock tax at its current level.

Second, a waste end tax. This is theoretically appealing but presents an interesting dynamic which makes it inappropriate as a sole financing mechanism. If the tax is high enough, it discourages the production of wastes; that in turn would reduce the funds available for the program. Achievement of both goals dictates that the size of the waste-end tax be limited.

Third are broader based taxes. These will be necessary to pay for an enlarged Superfund. It is nice to talk about making those who cause the problem pay to clean it up, but this presents practical as well as theoretical problems. On the practical side we must recognize that some polluters no longer exist. A targetted tax would become a tax on those who survived. So I return to my original point: Superfund is a national problem. The past insensitivity to environmental hazards was widely shared. To some extent, therefore, the clean-up cost also should be widely shared.

The current general revenue contribution to the fund should stay the same. We should also seek a broad-based industry tax to provide the added revenues needed for the larger cleanup program we believe is necessary.

I look forward to testimony on the various taxes to provide funding to accelerate the cleanup of our hazardous waste problems.

STATEMENT OF SENATOR GEORGE J. MITCHELL

Today we begin the task of raising revenues to fund the Superfund Program for the next 5 years.

The superfund law first enacted in 1980 was a major first step in addressing what was and continues to be a serious and compelling problem: the cleanup of the thousands of toxic waste sites across this country and continuing releases of hazardous substances into the environment. The program got off to a very slow start, but I am pleased to say that EPA is now implementing its cleanup and enforcement authorities vigorously. My overriding concern in this committee's deliberations will be to provide a level of funding sufficient to continue this progress.

The Committee on Environment and Public Works has approved superfund amendments which authorize $7.5 billion over the next 5 years. It is clear that even this increased funding will not complete the task at hand. Since 1980, EPA has undertaken a comprehensive inventory of hazardous waste sites across the country. It is now estimated that there are up to 22,000 potentially hazardous waste sites in the United States.

If EPA's current superfund level of activity is to be continued, long term cleanup can be started at approximately 115 sites each year. EPA estimates that its list of priority sites for which superfund money will be made available will grow to 2,200 sites ultimately, only 10 percent of the sites expected to be in their inventory. I emphasize that $7.5 billion should not be considered adequate given the magnitude of the program.

However, the members of the Environment Committee were also aware of the need to bring to the Senate a moderate bill which reflected a consensus. We believe that we did that. I hope that the members of this committee will act in a similar fashion with respect to superfund revenues.

In assessing the various revenue options available, I have been guided by three fundamental objectives: (1) those segments of industry most closely associated with the problem should continue to contribute an equitable amount to the fund; (2) at the same time, that segment of industry should not pay a disproportionate share of revenues which results in anticompetitive impacts; and (3) any revenue raising mechanism should create only minimal new administrative burdens on affected taxpayers and the Internal Revenue Service.

I introduced legislation last week with Senator Chafee which, in my view, meets these criteria. It imposes less of a burden on the chemical industry than the administration bill but raises more revenue. It includes a broad-based tax component, which I believe merits serious examination. In my view, some sort of broad-based tax is the only reasonable way to raise revenues in the $7.5 billion range. I hope that my colleagues will reach the same conclusion.

There is an urgent need for expeditious action on this legislation if we are to complete our work this year without any disruption to the program. I welcome these hearings and look forward to developing with other members a revenue measure which is equitable, administrative and more adequate to do the job than the current superfund.

Senator PACKWOOD. The committee will come to order, please.

This is the first of what I hope will be two days of hearings only on the issue of the Superfund, and as far as this committee is concerned our principal—issue is how it shall be financed. It is not our issue to determine the merits or the substance of the legislation. The principal controversies before us is one, how much should it be, and two, how should it be financed?

I have read, all of the witness's statements that were in as of last night. They will be in the record in full. The witnesses with the exception of the administration will be held to 5 minutes apiece, although I would encourage the administration to abbreviate its testimony and give us a chance for questions. The witness list indicates that about two-thirds of the committee is going to be here.

We will start this morning with Mr. Lee Thomas, the Administrator of the Environmental Protection Agency, and Mikel Rollyson, the tax legislative counsel for the Department of the Treasury.

Mr. Thomas, go right ahead.

Mr. THOMAS. Thank you, Senator.

I appreciate the opportunity to be here with you today to present portions of the administration's proposal and discuss with you reauthorization of Superfund, along with my colleagues from the Department of Treasury who will talk about the other portions of the administration's proposal and issues related to the revenue provisions of the reauthorization subject of Superfund.

You have a copy of my written statement, and with your permission I will highlight that statement and discuss with you some of the major components of our proposal.

Senator HEINZ. Mr. Chairman, is there going to be an opportunity for opening statements, or not?

Senator PACKWOOD. John, I was going to discourage opening statements. I have discovered that when we get into controversial matters they take 35 to 40 minutes when there are a lot of us here. There is nobody here, and if you have an opening statement now, go ahead.

Senator HEINZ. It is extremely brief.

Senator PACKWOOD. Go right ahead.

Senator HEINZ. Thank you, Mr. Chairman, and I want to thank Mr. Rollyson and Mr. Thomas.

Senator HEINZ. Mr. Chairman, as you pointed out, we begin 2 days of hearings on proposals to reauthorize Superfund. There is little doubt in my mind that the Superfund will be one of the most volatile issues that we are going to face this year.

We all recognize what those people who live in close proximity to hazardous waste sites must feel. They live with the agony and uncertainty of not knowing what is in the water the drink, the air they breathe, and how dangerous is the ground on which they walk.

Senator HEINZ. Mr. Chairman, as you pointed out, we begin two days of hearings on proposals to reauthorize Superfund. There is little doubt in my mind that the Superfund will be one of the most volatile issues that we are going to face this year.

We all recognize what those people who live in close proximity to hazardous waste sites must feel; they live with the agony and uncertainty of not knowing what is in the water they drink, the air they breathe, and how dangerous is the ground on which they walk.

Every state we represent has sites on EPA's National Priorities List. Pennsylvania, for instance, has 54 sites on the NPL. I think that the top issue in reauthorizing Superfund is to fund it at a level that will ensure the most dangerous sites are cleaned up quickly and thoroughly.

In general, I believe that the bill referred to the Finance Committee by the Environment Committee is a sound one. With over 800 sites already on the National Priorities List and with future additions numbering, by estimates, anywhere from 2,000, as estimated by EPA, to the 10,000 predicted in the recent OTA—Office of Technology Assistance—report, I believe that we cannot even begin to properly address this very serious issue for less than the $7.5 billion over the next 5 years proposed.

Thus, the question that we face today, and this committee must face, is how to raise approximately that amount. I don't believe as yet that we have a clear consensus as to what the best approach is, other than a general opposition to rely exclusively on the feedstock and crude oil taxing mechanisms for an expanded Superfund program. And I welcome, as I am sure do all the members of the committee, proposals to broaden the tax base of the Superfund, and I look forward to working with my colleagues on the committee in restructuring the Superfund so that it can do the job it needs to do without having a disruptive effect on any segment of the economy or the economy as a whole.

Mr. Chairman, I thank you.

Senator PACKWOOD. I thank the Senator from Pennsylvania. Are there any other opening statements?

Senator **Long**. None here.

Senator **Packwood**. Thank you.

If not, first I am going to move to Senator Lautenberg. We were ready to start at 10 and I didn't see Frank here then, but he has since come in. And if you two fellows don't mind waiting, just stay at the table, and Senator Lautenberg will testify from right where he is.

Frank?

STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator **Lautenberg**. I appreciate it. Thank you, Mr. Chairman and members of the committee. I apologize to my good friend Senator Moynihan because he has to listen to me drone on again, since he is, with me, a member of the Environment and Public Works Committee, as is Senator Chafee and other members of the Finance Committee.

I want to make it clear at the outset, Mr. Chairman, that though it has a different appearance I am not a member of Lee Thomas's staff. [Laughter.]

That for some time now, in all due respect to Mr. Thomas, I have felt that he was the boss and I was kind of doing the work there. But we are going to reverse that role today, Lee.

I appreciate the opportunity to testify before the committee today on the reauthorization of the Superfund program. My testimony carries a twofold message—one is that we need to act quickly, and the other is that we need to approve a substantially-enlarged Superfund program adequate to the tasks in front of us. Why we have to act quickly, I think perhaps is obvious, but let me address this briefly, because there seems to be little dispute on this score.

The Superfund program expires in 5 months. Virtually all of the funds have been obligated, and the sheer magnitude of the task and the need for EPA in the states to make the commitments necessary to operate the program without a loss of continuity requires the Congress to move quickly to put an expanded Superfund program into place.

It is a complicated system. It is a complex management problem, and we cannot wait until the last minute for reauthorization.

Why do we need an enlarged Superfund program? And how large a fund do we need? These are the issues now I would like to spend some time on.

The Environment and Public Works Committee recently approved S. 51 to increase the Superfund to $7.5 billion. Prior to this markup, I had introduced my own legislation, S. 493, which called for a $10 billion program. My belief is that the Superfund Program needs more, and certainly not less, than the $7.5 billion approved by the Environment and Public Works Committee, and I would like to tell you why.

The Superfund National Priority List currently lists 812 sites as eligible for Federal cleanup assistance. What does this mean? It means that a site has been found to pose an immediate public health or environmental threat.

EPA has identified over 20,000 other sites that are prospects for listing. Of these, 4,000 sites will likely end up on the National Priorities List.

Removal actions in response to spills and other releases also number in the hundreds each year. The agency is expanding its activities in this regard as well.

Progress in cleaning up Superfund sites has been painfully slow to date. Only six sites—I am told by Mr. Thomas yesterday that the number may be slightly larger—have been cleaned up to a remedial standard and removed from the NPL. The pace is unacceptable.

The Governors of this country, who have the responsibility for dealing with toxic waste crises on a daily basis, agree. They deal first hand with the frustration and fear that is building up in communities all across the country—communities with water supplies shut off because wells have been contaminated; communities unable to protect the health of their citizens, young and old alike; communities unable to attract new jobs and industry because of toxic dumps.

We need to approve a program that will make meaningful progress in addressing this glaring public health and environmental problem.

For this reason, the National Governors Association supports a $9 billion Superfund. The NGA arrived at this figure building from the ground up. This is the minimum level our Governors consider acceptable to pace cleanup programs to meet the needs in their States.

In 1980, when Congress first established the Superfund program, it directed EPA to undertake a series of studies. One of these studies, completed this past December, addressed the extent of the problem and the costs associated with cleanup. What does that study tell us?

EPA estimates it will cost $11.7 to $22.7 billion to clean up the 1,800 to 2,200 sites EPA expects to have on the NPL list. The General Accounting Office, which completed an overview of the Superfund Program just this past March, estimated that cleanup in these sites could run between $7 billion and $40 billion. The range is wide, but we can understand why there is such a range.

Clearly, it is difficult to be very precise about exact costs, but it is clear that the size of the Superfund will drive the pace of the program. And it is just as clear that $7.5 billion recommended by the Environment and Public Works Committee is the minimum required.

Let's look at the administration's proposal. Within this context, the administration has recommended a $5.3 billion program, substantially smaller than its own studies indicate would be adequate. Further, the administration's estimates are indeed misleading. The administration has projected, under its proposal, that assistance will be provided for feasibility studies or remedial actions at about 115 sites per year.

Now, please keep in mind the fact that there are likely be several thousand sites included in the list.

We may disagree about whether this is an acceptable pace for the program. Of course, I would like to see a faster pace. However, laying aside this disagreement, it must be underscored that these estimates are just unrealistic. They don't take into account inflation of the dollar or the cleanup costs—inflation in both areas. Again, dollar inflation and the expansion of the scope of the task. They assume an extremely high rate of cost recovery from responsible parties, far higher than EPA to date has been able to realize, and we hope that they can recover the costs; but we have to face reality. And they don't adjust for deteriorating conditions and sites, even though experience has shown that delay in cleaning up these sites increases the ultimate cost.

In sum, the administration's proposal at $5.3 billion assumes a limited and painfully slow pace of the program. Mr. Chairman, the key issue posed by the Superfund Reauthorization bill is how far and how fast the program will go over the next 5 years. The Finance Committee will play a pivotal role in answering this question.

S. 51, approved overwhelmingly in our committee, makes a number of important amendments to the program. Many of these changes will make the program more effective and thus create a greater demand on the fund. A limited number of amendments would expand the program.

The CBO estimated that the cumulative costs of these provisions would be roughly $700 million.

The bill also makes important changes to the program that were not considered by CBO. These include the committees "how clean is clean?" language which favors treatment over disposal or containment of waste, and language allowing states to obtain credits and seek reimbursement for cleaning up Superfund sites at a pace faster than the Federal plan.

I ask that the Finance Committee keep these points in mind in considering a funding level for S. 51. In addition, I ask the committee to consider an accelerated program. I applaud my colleague from New Jersey, Senator Bill Bradley, for adding an ambitious schedule to his Superfund, bill S. 596.

In its review of S. 51, the committee will need to consider proposals to broaden the tax base for this program and to find a reliable revenue source for the program well into the future. My colleague from New Jersey has proposed a Net Receipts Tax; my colleagues on the Environment and Public Works Committee, Senators Mitchell and Chafee, have proposed another version of a broader-based tax. Both of these proposals acknowledge that the Superfund cleanup is a national problem and that corporations all over the country have shared in the benefits of an increasingly-complex industrial society and economy.

I would like to close this testimony with a personal note. Last year, Ray Adams, a citizen of Pomona Oaks, NJ, testified before the Environment and Public Works Committee. His community's household water supplies were contaminated with benzene, a potent carcinogen. Ray was advised by the New Jersey Department of Health that when he took a shower, make it short, under light sprays, tepid temperatures, open windows, to make sure that the room was appropriately aired, and to close his bathroom door after a shower to prevent the chemicals from contaminating his house. The Center for Disease Control advised him to stop using his water completely. This is the basic water supply. The Center indicated that benzene was such a potent carcinogen that zero exposure was recommended.

Well, today the citizens of Pomona Oaks have a clean source of household water. The aquifer underlying Pomona Oaks has been designated a Superfund site. These are positive developments for Pomona Oaks; but, unfortunately, our country is dotted with hundreds of Pomona Oaks. And I don't think that they are going to get as satisfactory treatment as the people did at Pomona Oaks, unless we have the funding to do this job.

Mr. Chairman, I appreciate the time you and the committee have spent hearing me. I look forward to working with all of you to renew and improve the Federal Superfund Program.

Senator PACKWOOD. One quick question, Senator. We have a variety of bills before us as to how the Superfund should be paid for. Do you have any preference?

Senator LAUTENBERG. Well, I defer to the members of the committee. I for one have said in the Environment and Public Works Committee that I think we do have to broaden the base beyond simply the feedstock providers, because it is a national problem, and it has implications for corporations throughout our society as well as citizens throughout our country who enjoy the benefits of the products that are made. And I do think we are going to have to, in some way, look at a general revenue base.

Senator PACKWOOD. Our early-bird list is as follows: Packwood, Heinz, Long, Moynihan, Wallop, Chafee, Bradley, and Mitchell. Senator Heinz is gone. Senator Long?

Senator LONG. No questions. Thank you for your statement, Senator.

Senator PACKWOOD. Senator Moynihan?

Senator MOYNIHAN. Mr. Chairman, just to welcome my colleague from the Committee of Environment and Public Works. And we do have a nice exchange here, since Senator Chafee is a member, and I am a member. So there is a real connection here in the committee.

You mentioned general revenue funding, but, as you know, Senator Bentsen and I introduced a bill, S. 14—we were in there fairly early—to add a waste-end tax to the Superfund mix. Right now we draw all of our revenues from a tax on some 42 chemicals, which is a fairly manageable tax, there aren't that many producers. But in the whole principle of environmental management, I think it is agreed that some cost should be associated with the producers of a toxicity and not just the manufacturers of the basic ingredients.

I would assume that you would agree that a waste-end tax is at least a thought to be considered by this committee. At some point it makes it more expensive to produce toxic wastes, and in consequence there is an incentive to produce fewer of them. Would you comment on that, Senator?

Senator LAUTENBERG. Yes. My distinguished friend and colleague from New York does touch the target on the mark. Lest I be misunderstood, I was not recommending that this program be funded by general revenues. I share Senator Moynihan's view that a variety of sources should be looked at for funding these programs. And once again, I think that we have to get on with it as quickly as possible, and I am pleased that all programs under consideration—there is the Chafee-Mitchell proposal, the Moynihan-Bentsen, Senator Bradley's—all these are meritorious programs, and I would hope that the committee can arrive at a consensus, using whatever means are available, to make it the least painful taxing system possible while we get on with the job.

Senator **Moynihan**. But you would recognize that? Quite apart from the revenue-raising aspects of a waste-end tax, there is an incentive element.

Senator **Lautenberg**. Absolutely.

Senator **Moynihan**. I mean, is it cost-free to produce toxic wastes? Or is there a cost associated which presumably produces fewer?

Ideally, a waste-end tax would produce no revenue at all.

Senator **Lautenberg**. Yes, discourage the pollution. Absolutely. I agree.

Senator **Moynihan**. Thank you.

Senator **Packwood**. Senator Wallop?

Senator **Wallop**. Mr. Chairman, I would ask that an opening statement that I have be included in the record.

Senator **Packwood**. Without objection. And I appreciate you putting it into the record rather than reading it. Thank you.

Senator **Wallop**. What is perhaps most disturbing, Senator Lautenberg, in the debate over Superfund is that we don't seem to have a firm grasp of what are hazardous wastes, nor do we even know what are toxic impacts on such wastes on humans and the enviornment.

EPA has issued four lists, classifying 400 substances as hazardous wastes; but the existing feedstock tax to fund Superfund covers only 42 of those substances. And yet there are perhaps hundreds if not thousands of substances which may be hazardous

Some would respond to this dilemma by demanding more federal money to fight hazardous wastes, and it makes for great stump speeches, but it isn't realistic.

In a report issued last month, GAO stated that although uncontrolled hazardous waste sites poses a substantial danger to human health and the environment, the scope of the hazardous waste problem, the degree of health risk involved and the cost of correcting these problems are unknown. Wouldn't it seem better, really, before we put a figure, a dollar figure on this, to really force the EPA into some kind of a structure where we had a better handle on what it was we were trying to do? Because I fear that one of the things we are doing is creating more hazardous waste sites as a result of the cleanup, because we are just moving them around in circles. And the new ones, as I read the Superfund that has passed the committee, will not be eligible for Superfund.

That is one of the problems that I have with going along with your request, that $7.5 billion is a minimum and maybe $10 billion or more would be more so. I have no objection to spending money on purpose, but I have great objection to spending it for an ill-defined program with an ill-directed goal.

Senator **Lautenberg**. The Senator from Wyoming touches on discussions which we have had with some degree of frequency in the Environment and Public Works Committee. I would hope that it would be assumed that I would not be on the opposite side of your admonition about spending money needlessly. I don't think I have earned that kind of reputation.

Senator **Wallop**. I wasn't suggesting that you were. The focus of my question was how do we get to someplace where we are doing something on purpose rather than doing something for show?

Senator **Lautenberg**. And I certainly agree with that. Again, we have had numerous hearings and reviews of the subject to try to determine how effective the program is and how dangerous the development of toxic waste sites gets to be. And I submit to my colleague from Wyoming that, if you heard some of the testimony of those who were exposed to contaminated water supplies, and heard about the dramatic difference in child health—particulary in one family, who when they moved away a short distance, near Lowell, MA, they moved a short distance away, and there was a perceptible improvement in the health of the children in this family, first in a day and then in days, coughing and emissions from body openings and so forth, just a very dramatic change.

And we have seen health deterioration in so many cases in different locations around the country, that the urgency certainly is there. And when we talk about scope and see the number of agencies that have come up and suggested what needs to be done to do the job, including the Governors—I assume we have a variety of political persuasions in there, but certainly a recognition of what the needs are within the States—that say we need $9 billion. And even EPA's estimates are far greater than that which is being requested.

What we are really arguing about, Senator Wallop, is pace. Eventually we are going to have to deal with these problems, and we are going to have to deal with them in virtually every State in our country. I don't think there is one State, as I remember the map, that is exempt from Superfund priority-site listing.

So I think that these $7.5 billion can be used, can be used efficiently, regardless of EPA's testimony that $5 billion is a comfortable number for efficient use. I say use contractors, use the creativity that I know rests within that Department now; it's leadership is very good. And they can figure out ways to get this job done. And I think we ought to fund it at the kinds of levels that have been recommended by the Environment and Public Works Committee, at a minimum.

Senator **Wallop**. Mr. Chairman, I just would make an observation, that I have no problem with funding the job. I want the job defined.

Senator **Lautenberg**. I agree with that.

Senator **Packwood**. Senator Chafee?

Senator **Chafee**. Thank you, Mr. Chairman.

I have a statement that I would like to put in. Also, I would like to join in welcoming our colleague from the Environment and Public Works Committee, Senator Lautenberg, here. He has had a deep interest in this area, has been a very constructive member of the Environment and Public Works Committee and has spent a lot of time on Superfund. I know of his deep interest, and we appreciate his taking the time to help us today.

Senator **Lautenberg**. Thank you.

Senator **Packwood**. Thank you.

Senator Bradley?

Senator **Bradley**. Mr. Chairman, let me thank you, and let me thank Senator Lautenberg for his excellent testimony and for his support of the concept of a broadbased tax. His testimony revealed what none of us should forget: the end of our legislative efforts is to try to remove a public health threat from citizens like Ray Adams, that you mentioned in Pomona Oaks, and countless others in New Jersey, and across this country who are threatened by toxic wastes and who are depending on us to remove that threat from their lives.

So I want to thank Senator Lautenberg, as his colleague representing New Jersey, for his leadership in the Environment and Public Works Committee and for his personal commitment to trying to improve a dangerous situation for the citizens of our State and those across the country.

Senator **Packwood**. Senator Mitchell?

Senator **Mitchell**. Thank you, Mr. Chairman. I have no questions, but as a member of the Senate Committee on the Environment, I want to commend Senator Lautenberg for all he has done. He has played a major role in the shaping of this legislation in that committee, for which I and many others are grateful. And I also thank him for his statement today.

Senator **Lautenberg**. Thank you.

Senator **Packwood**. Frank, thank you very much for coming.

Senator **Lautenberg**. Thanks very much, Mr. Chairman, and thanks, members of the committee.

[The prepared statement of Senator Frank R. Lautenberg follows:]

TESTIMONY BY SENATOR FRANK R. LAUTENBERG April 25, 1985

SENATE FINANCE COMMITTEE

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, I APPRECIATE THE OPPORTUNITY TO TESTIFY BEFORE THE COMMITTEE TODAY ON THE REAUTHORIZATION OF THE SUPERFUND PROGRAM.

MY TESTIMONY CARRIES A TWOFOLD MESSAGE: WE NEED TO ACT QUICKLY. AND WE NEED TO APPROVE A SUBSTANTIALLY ENLARGED SUPERFUND PROGRAM ADEQUATE TO THE TASK BEFORE US.

WHY DO WE NEED TO ACT QUICKLY? LET ME ADDRESS THIS RELATIVELY BRIEFLY, BECAUSE THERE IS LITTLE DISPUTE ON THIS SCORE. THE SUPERFUND PROGRAM EXPIRES IN FIVE MONTHS. VIRTUALLY ALL OF THE FUNDS HAVE BEEN OBLIGATED. THE SHEER MAGNITUDE OF THE TASK, AND THE NEED FOR EPA AND THE STATES TO MAKE THE COMMITMENTS NECESSARY TO OPERATE THE PROGRAM WITHOUT A LOSS OF CONTINUITY, REQUIRE THAT THE CONGRESS MOVE QUICKLY TO PUT AN EXPANDED SUPERFUND PROGRAM INTO PLACE. WE SHOULD NOT WAIT UNTIL THE LAST MINUTE TO SEND A BILL TO THE PRESIDENT FOR HIS SIGNATURE.

WHY DO WE NEED AN ENLARGED SUPERFUND PROGRAM? AND HOW LARGE A FUND DO WE NEED? THESE ARE THE ISSUES I WOULD LIKE TO DWELL ON.

THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE RECENTLY APPROVED S. 51 TO INCREASE THE SUPERFUND TO $7.5 BILLION. PRIOR TO THIS MARKUP, I HAD INTRODUCED BY OWN LEGISLATION, S. 493, WHICH CALLED FOR A $10 BILLION PROGRAM. MY BELIEF IS THAT THE SUPERFUND PROGRAM NEEDS MORE, AND CERTAINLY NOT LESS, THAN THE $7.5 BILLION APPROVED BY THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE. LET ME TELL YOU WHY.

THE SUPERFUND NATIONAL PRIORITY LIST CURRENTLY LISTS 812 SITES AS ELIGIBLE FOR FEDERAL CLEANUP ASSISTANCE. WHAT DOES THIS MEAN? IT MEANS THAT A SITE HAS BEEN FOUND TO POSE AN IMMEDIATE PUBLIC HEALTH OR ENVIRONMENTAL THREAT.

EPA HAS IDENTIFIED OVER 20,000 OTHER SITES THAT ARE PROSPECTS FOR LISTING. OF THESE, 4000 SITES WILL LIKELY END UP ON THE NPL.

REMOVAL ACTIONS IN RESPONSE TO SPILLS AND OTHER RELEASES ALSO NUMBER IN THE HUNDREDS EVERY YEAR. THE AGENCY IS EXPANDING ITS ACTIVITIES IN THIS REGARD.

PROGRESS IN CLEANING UP SUPERFUND SITES HAS BEEN PAINFULLY SLOW TO DATE. ONLY SIX SITES HAVE BEEN CLEANED UP AND REMOVED FROM THE NPL. THIS IS SIMPLY UNACCEPTABLE.

THE GOVERNORS OF THIS COUNTRY, WHO HAVE THE RESPONSIBILITY FOR DEALING WITH TOXIC WASTE CRISES ON A DAILY BASIS, AGREE. THEY DEAL FIRST HAND WITH THE FRUSTRATION AND FEAR THAT IS BUILDING UP IN COMMUNITIES ALL ACROSS THE COUNTRY---- COMMUNITIES WITH WATER SUPPLIES SHUT OFF BECAUSE WELLS HAVE BEEN CONTAMINATED; COMMUNITIES UNABLE TO PROTECT THE HEALTH OF THEIR CITIZENS, YOUNG AND OLD ALIKE; COMMUNITIES UNABLE TO ATTRACT NEW JOBS AND INDUSTRY BECAUSE OF TOXIC DUMPS.

WE NEED TO APPROVE A PROGRAM THAT WILL MAKE MEANINGFUL PROGRESS IN ADDRESSING THIS GLARING PUBLIC HEALTH AND ENVIRONMENTAL PROBLEM.

FOR THIS REASON, THE NATIONAL GOVERNORS' ASSOCIATION SUPPORTS A $9 BILLION SUPERFUND. THE NGA ARRIVED AT THIS FIGURE BUILDING FROM THE GROUND UP. THIS IS THE MINIMUM LEVEL OUR GOVERNORS CONSIDER ACCEPTABLE TO PACE CLEANUP PROGRAMS TO MEET THE NEEDS IN THEIR STATES.

IN 1980, WHEN CONGRESS FIRST ESTABLISHED THE SUPERFUND PROGRAM, IT DIRECTED EPA TO UNDERTAKE A SERIES OF STUDIES. ONE OF THESE STUDIES, COMPLETED THIS PAST DECEMBER, ADDRESSED THE EXTENT OF THE PROBLEM AND THE COSTS ASSOCIATED WITH CLEANUP. WHAT DOES THIS STUDY TELL US?

EPA ESTIMATES IT WILL COST $11.7 TO $22.7 BILLION TO CLEAN UP THE 1800 TO 2200 SITES EPA EXPECTS TO PUT ON THE NPL IN THE NEAR FUTURE. THE GAO, WHICH COMPLETED AN OVERVIEW OF THE SUPERFUND PROGRAM JUST THIS MARCH, ESTIMATED THAT CLEANUP OF THESE SITES COULD RANGE BETWEEN $7 BILLION AND $40 BILLION.

MR. CHAIRMAN, THE KEY ISSUE POSED BY THE SUPERFUND REAUTHORIATION BILL IS HOW FAR AND HOW FAST THE PROGRAM WILL GO OVER THE NEXT FIVE YEARS. THE FINANCE COMMITTEE WILL PLAY A PIVOTAL ROLE IN ANSWERING THIS QUESTION.

S. 51 APPROVED OVERWHELMINGLY IN OUR COMMITTEE MAKES A NUMBER OF IMPORTANT AMENDMENTS TO THE PROGRAM. MANY OF THESE CHANGES WILL MAKE TEH PROGRAM MORE EFFECTIVE, AND THUS CREATE A GREATER DEMAND ON THE FUND. A LIMITED NUMBER OF AMENDMENTS WOULD EXPAND THE PROGRAM. THE CBO ESTIMATED THAT THE CUMULATIVE COSTS OF THESE PROVISIONS WOULD BE ROUGHLY $700 MILLION.

THE BILL ALSO MAKES IMPORTANT CHANGES TO THE PROGRAM THAT WERE NOT CONSIDERED BY CBO. THESE INCLUDE THE COMMITTEE'S "HOW CLEAN IS CLEAN" LANGUAGE, WHICH FAVORS TREATMENT OVER DISPOSAL OR CONTAINMENT OF WASTES, AND LANGUAGE ALLOWING STATES TO OBTAIN CREDITS AND SEEK REIMBURSEMENT FOR CLEANING UP SUPERFUND SITES AT A PACE FASTER THAN THE FEDERAL PLAN.

I ASK THAT THE FINANCE COMMITTEE KEEP THESE POINTS IN MIND IN CONSIDERING A FUNDING LEVEL FOR S. 51. IN ADDITION, I ASK THE COMMITTEE TO CONSIDER AN ACCELERATED PROGRAM. I APPLAUD MY COLLEAGUE FROM NEW JERSEY, SENATOR BILL BRADLEY, FOR ADDING AN AMBITIOUS SCHEDULE TO HIS SUPERFUND BILL, S. 596.

IN ITS REVIEW OF S. 51, THE COMMITTEE WILL NEED TO CONSIDER PROPOSALS TO BROADEN THE TAX BASE FOR THIS PROGRAM, AND TO FIND A RELIABLE REVENUE SOURCE FOR THE PROGRAM WELL INTO THE FUTURE. MY COLLEAGUE FROM NEW JERSEY HAS PROPOSED A NET RECEIPTS TAX. MY COLLEAGUES ON THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE, SENATORS MITCHELL AND CHAFEE, HAVE PROPOSED ANOTHER VERSION OF A BROADER BASED TAX. BOTH OF THESE PROPOSALS ACKNOWLEDGE THAT THE SUPERFUND CLEANUP IS A NATIONAL PROBLEM AND THAT CORPORATIONS ALL OVER THE COUNTRY HAVE SHARED IN THE BENEFITS OF AN INCREASINGLY COMPLEX, INDUSTRIAL SOCIETY AND ECONOMY.

I WOULD LIKE TO CLOSE THE TESTIMONY WITH A PERSONAL NOTE. LAST YEAR, RAY ADAMS, A CITIZEN OF POMONA OAKS, NEW JERSEY, TESTIFIED BEFORE THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE. HIS COMMUNITY'S HOUSEHOLD WATER SUPPLIES WERE CONTAMINATED WITH BENZENE, A POTENT CARCINOGEN. RAY WAS ADVISED BY THE NEW JERSEY DEPARTMENT OF HEALTH TO TAKE SHORT SHOWERS, UNDER LIGHT SPRAYS; TO OPEN WINDOWS WHEN TAKING A SHOWER TO AIR THE ROOM; AND TO CLOSE HIS BATHROOM DOOR AFTER A SHOWER TO PREVENT CHEMICALS FROM CONTAMINATING HIS HOUSE. THE CENTER FOR DISEASE CONTROL ADVISED HIM TO STOP USING HIS WATER COMPLETELY. THE CENTER INDICATED THAT BENZENE WAS SUCH A POTENT CARCINOGEN THAT ZERO EXPOSURE WAS RECOMMENDED.

TODAY, THE CITIZENS OF POMONA OAKS HAVE A CLEAN SOURCE OF HOUSEHOLD WATER. THE AQUIFER UNDERLYING POMONA OAKS HAS BEEN DESIGNATED A SUPERFUND SITE. THESE ARE POSITIVE DEVELOPMENTS FOR POMONA OAKS. BUT, UNFORTUNATELY OUR COUNTRY IS DOTTED WITH HUNDREDS OF POMONA OAKS.

MR. CHAIRMAN, I APPRECIATE THE TIME YOU HAVE SPENT HEARING ME OUT. I LOOK FORWARD TO WORKING WITH THE COMMITTEE TO RENEW AND IMPROVE THE FEDERAL SUPERFUND PROGRAM.

Senator PACKWOOD. Now, gentlemen, we will proceed.

Mr. Thomas, if you want to go first, your entire statement will be in the record, and if you can abbreviate it we will appreciate it.

STATEMENT OF LEE THOMAS, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON, DC

Mr. THOMAS. Thank you, Senator.

As you indicated, the committee intends to focus on the two aspects of reauthorization of Superfund related to how much revenue needs to be raised and how to raise it. And today I would like to focus my points on how much revenue we feel needs to be raised in order to support the pace of the program which we think is appropriate.

Clearly, the administration is strongly committed to reauthorization of a strengthened and improved Superfund statute, as evidenced by the proposal which the President submitted to Congress this year for reauthorization of this program.

The Superfund program presents an enormous challenge to us and to the country. Just to give you a small idea of what that challenge is before I get into the specifics of how much revenue needs to be raised to meet that challenge, let me just explain to you briefly the process we use for addressing the issue of hazardous wastes, hazardous substance sites in this country.

Each one of those sites presents major issues for us to deal with:

Management issues related to managing the actual assessment or the response and cleanup of a site;

Scientific uncertainty that was evidenced in earlier comments this morning by Senator Wallop and others, and that is: What is the problem we are dealing with, and what kind of conclusions can we draw about this soup of chemicals that we often find at a Superfund site?

Technical uncertainty as to how will we address the problem that we find, and is our technology such that we can have certainty in the remedy that we find ourselves placing at a Superfund site to deal with the problem?

Major legal issues at each site, as we seek to carry out the authorities you have given us to recoup or to promote the cleanup of a site by responsible parties, the private parties who created the problem.

And finally, the issue of dealing with the community. As you know better than I, each of these sites is in a community, a community that is quite concerned about the problem as well as the solution, and the challenges we face in interacting with that community in a positive way is significant.

As we look at the sites, we find that we have both short-term problems and long-term problems. Both types of sites present challenges in each of the areas I mentioned.

Short-term problems often we find are smaller problems to deal with and can be dealt with fairly quickly using our removal authority. Longer-term problems are the ones which you traditionally hear about. We deal with them through our remedial program.

But just quickly, to tell you how we address the problem, we have gone through a site identification and assessment phase across the country to determine how great this problem is. And we have completed that at nearly 15,000 sites, trying to identify the scope of the problem, how that problem should be dealt with. If we determine there is any kind of immediate threat to public health or the environment, or a potential threat that should be stabilized, we use our emergency removal authorities. By the end of this year we will have used those authorities at over 600 of those sites, actually completing action at the majority of them, often completely cleaning up the site.

The longer-term projects, though, the more chronic threats, the ones that make the majority of the news and the ones that you hear about because of the length of time required to deal with them, are dealt with under our remedial program, the first phase of which is an engineering study to determine the full extent of the problem and possible remedies for completing the cleanup at that site. By the end of the year we will have completed action or be underway at well over 400 of these major project sites with engineering studies.

Then we move into a design phase. And by the way, that engineering study, we find, takes on average 18 months and costs on average $800,000.

The design phase takes another 9 months on average, where we actually design the remedy from an engineering view for the site. On average, we find that costs $440,000.

Then we move into the construction phase of the program, the largest cost by far. On average, we find that takes us 12 months and costs about $6.5 million.

And finally, we move into our operation and maintenance stage on those sites that require operation and maintenance, some of which require that for a long period of time, particularly if we have groundwater contamination. We fund that for the first year after we have actually completed construction on the site, and on average we find that costs us $360,000, for a total $8.1 million average cost for our long-term sites.

On top of that process of site identification, emergency removal or long-term cleanup, we focus our enforcement efforts at each stage. Largely, at the removal or the remedial stage we are working to identify responsible parties, seeking to discuss with responsible parties their responsibilities and remedies, seeking to have them take the lead in actually dealing with the site, or proceeding with litigation to either force that lead or eventually, debt if we have completed action, to recoup our costs.

So, enforcement overlays our entire process, and it actually operates on a parallel and integrated track throughout the process of dealing with a site.

With that basic understanding of the process we use, and with the understanding that we now have had 4 years of experience with the Superfund program—different, certainly, from where you were 4 years ago when you began the Superfund program—we have taken that 4 years experience and we have developed a proposal for a 5-year reauthorization.

A key component of that five-year reauthorization is the pace at which we feel we should operate the program. We tried to balance two things in developing what we think is the optimum pace. On the one hand, the threat presented by these sites, public health or environmental, ensuring that we have a program that is responsive to that threat. If it is an immediate threat, a program that would respond immediately through our removal authorities; if it is a longer-term chronic threat, a program that responds within a timeframe that ensures that public health or the environment is not exposed beyond the exposure we find.

So that threat is one major issue we have looked at. On the other side we have to look at our management capacity, our ability to use the funds you have given us wisely, our ability to try to ensure that there is not waste, abuse, or mismanagement of the fund.

We have increased the pace of this program significantly over the last 2 years, and our proposal suggests that that momentum continue and gradually escalate.

As you can see from the chart on my left, in our remedial program, our large long-term cleanup program, the number of new starts or new sites where we will begin action increases, significantly between 1986 and 1990.

Senator CHAFEE. Mr. Thomas, I am unable to read the description of the different colors. Could you identify them for us? What is the red, the green, and the blue?

Mr. THOMAS. Yes, Senator. The red at the bottom represents the engineering studies that I indicated we initiated at each site, beginning in fiscal year 1986 at 180 sites. This is both our projection for our enforcement program, responsible party actions, as well as our fund financed actions.

The engineering study stage increases gradually over the 5 years, to fiscal year 1990, with 220 new site starts. As I indicated, that engineering study takes, on average, 18 months. The next stage is the design phase, and that is represented by the green on the chart.

Obviously, we have a large pipeline of projects underway, so in addition to the new starts we have each year we have those projects we already have underway. And as you can see, the design phase goes up, again, significantly over the 5 years.

The most dramatic increase over the 5 years is in the construction phase, the phase of the program that basically occurs 2½ years after we have begun action at a site. And as you can see, we have in the pipeline some construction projects that will begin to come to fruition dramatically in 1986 but particularly in 1987. And, as you can see, by fiscal year 1990 we would have 617 new starts when you look at each of those 3 different components.

That is for the remedial program; it does not include that emergency cleanup program which I indicated is our short-term, immediate-threat response program.

Let me turn to the next chart, because I think it is more instructive than just looking at new sites.

Senator PACKWOOD. Mr. Thomas, I am going to have to ask you to wind down, because we do hold our witnesses to limited testimony here, or we would never get through.

I might say to the audience, it is my intention to run right through the noon hour today. I think, as I look at the witness list, we will probably go until 1:30 or 2.

Mr. THOMAS. Thank you, Senator. I will.

This is the factor I would like to focus on as far as pace of the program is concerned, because it represents the cumulative management challenge that we have each year.

In addition to the new sites, we have the ongoing projects. As you can see, the blue on this chart represents emergency actions which we initiate each year, and our projection is 238 new sites each year will require emergency action. Engineering studies which I have discussed, are in red; the design phase and the construction phase are the green and the purple.

From when we start a project until the time we finish a project, we are on a site a average of 4½ years. As you can see, the total number of sites we are dealing with in any 1 year reaches a total of 811 sites in fiscal year 1990. Each one of the sites is as complex as many you are aware of in your own States. We have to deal with the management, technical, scientific, legal, and community concerns at each of those sites.

So when you add the emergency removal sites, we are dealing with over 1,000 sites simultaneously under the Superfund program in the final year of this program. Next year, we will be dealing with over 700 sites simultaneously across this country.

It presents a major management challenge to utilize the funds which you provide to us effectively and efficiently, and we think the pace presented by the administration's proposal as reflected in these charts reaches an equitable balance between the threat that is presented to public health or the environment and our ability to satisfactorily manage this kind of program.

As a matter of fact, I think it stresses our abilities.

Senator PACKWOOD. I am going to have to ask you to conclude, Mr. Thomas.

Mr. THOMAS. Thank you very much, Mr. Chairman, for the opportunity to present this. It reflects a cost of $5.3 billion. It also reflects responsible-party costs for cleanup of approximately $2 to 2.5 billion during that period of time, for a $7.5 to $8 billion cleanup program over the 5 year period.

Thank you, Mr. Chairman.

Senator PACKWOOD. Mr. Rollyson?

[Mr. Thomas's written testimony follows:]

STATEMENT OF LEE M. THOMAS
ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
COMMITTEE ON FINANCE
UNITED STATES SENATE

APRIL 25, 1985

Mr. Chairman and members of the Committee. It is a pleasure to be here today to talk about the Administration's proposal to reauthorize the Comprehensive Environmental Response, Compensation, and Liability Act -- the Superfund. In particular, I want to lay out for you a complete rationale for the cost and revenue projections supporting our proposed funding level and mention our proposed financing provisions.

As you know, on a number of occasions I have expressed concerns about the size and scope of some of the reauthorization options considered by Congress. Historically, there has been a tendency on the part of the Federal government, whenever it deals with a major national problem, to equate total funding with the effectiveness of a particular solution. The more we spend, the more we must be doing. Or so that philosophy goes.

With Superfund, this is not the case. We are faced with a national challenge that is enormous in scope and implication. But during the past two years, we have worked hard to fashion a program capable of dealing with both the immediate and the long-term consequences of the hazardous waste problem. It is essential, as we prepare to extend that effort, to make sure we stay on course with a program which has been proven effective.

I am convinced that the Administration's Superfund reauthorization bill is a sound and responsible approach for implementing our hazardous waste cleanup program for the next five years. It triples resources available for actual cleanup work. It focuses those resources on the most serious problems first -- uncontrolled and abandoned hazardous substance sites. And it strengthens our ability to enforce the law and impose stringent new penalties on those who violate it.

In short, the bill gives EPA the resources and the authorities we need to continue to build on the cleanup momentum established during the past two years. The President told me to make Superfund my top legislative priority for 1985, and I have. I will work with you to assure that the Superfund program is allowed to continue with its vital mission.

As I said, our proposal will substantially increase the size of the fund. It will generate some $5.3 billion during the next five years, principally from taxes on those industries linked directly to the nation's hazardous waste problems. Coupled with an aggressive enforcement program which we project will yield an additional $2 billion in private-party cleanup, we anticipate a program likely to generate approximately $7.5 billion in total cleanup activity between 1986 and 1990.

With this resource base, we will be able to expand our emergency cleanup program for addressing immediate threats to human health and the environment. In the long-term arena, we will work toward permanent solutions to chronic hazards. And we will guarantee that affected communities and individual citizens have a meaningful role to play in all of our cleanup activities.

My purpose today is not to address the details of the Administration's proposal, although I am happy to answer any questions you may have. Rather, I would like to spend my time here talking through with you why I feel this bill provides us with all the resources we can use during the next five years. I want to explain where we see the funding coming from, and what we expect to be buying in the way of cleanup.

It is my hope that we will conclude today's hearing with a better understanding of the Administration's package, the rationale for those options we have selected in crafting it, the complexity of the Superfund program as it moves into high gear, and the reasons why this bill represents our best bet for moving forward with the second phase of this national priority program.

Putting together the reauthorization package has been a difficult challenge. The original Superfund law was sweeping in nature and scope. But it was designed to address a problem of unclear magnitude, in the absence of any first-hand experience.

Today, we have that experience. Superfund reflects over four years of experience. We have a far better appreciation for the complexity of the problem we face, and for its enormity. We have our feet on the ground and we are making progress.

We have in place an effective program for identifying potentially hazardous sites, evaluating them, assessing the risks posed by each, and selecting those requiring Federal attention. More than 800 sites are now on our National Priorities List. As many as 2,000 sites -- perhaps more -- will eventually be identified as most in need of long-term cleanup, often using Federal resources.

But the Superfund law does more. It also gives us tools for protecting human health and the environment from immediate dangers caused by unexpected releases of hazardous substances. Under this emergency cleanup authority we can take a variety of steps to address immediate dangers at any site.

It is these two primary authorities -- long-term authority to clean up sites posing chronic threats and emergency authority to eliminate immediate hazards -- that are the framework within which we plan for the future.

Based on projections for how many new long- and short-term activities we will start each year, historic data on how long it takes to conduct various cleanup steps, and experience with costs, we are able to put forward what we feel are reliable estimates of our needs over the next five years.

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Long-term cleanup work at national priority sites has three distinct phases. First, there is the planning phase during which engineers and other technical professionals carefully characterize the site and assess the feasibility of cleanup options. Second, once we decide on a cleanup strategy, we design the remedy. Finally, we actually implement the remedy. This is generally a complex construction project.

Typically, it takes about 18 months to carry out the first step. Our remedial investigations and feasibility studies look at all site factors, including geological structure, soil characteristics, mixes and concentrations of contaminants, and hydrogeology. With this information, we determine the extent of the problem, including whether groundwater has been contaminated.

We spend on average about $800,000 for each of these comprehensive studies. But without them, it is impossible to undertake an effective cleanup. Every Superfund site is unique. There is no generic cleanup strategy. A complete remedial plan must be developed for each. The Federal government pays for 100% of the cost of these studies.

On the basis of the information we gather, we make our cleanup decisions. Because each site is unique, each remedy requires its own special design. Each is a detailed engineering blueprint. Each takes about nine months to complete at a cost of $440,000. The Federal government picks up the entire cost.

Construction of the remedy is the most costly portion of the cleanup process. Our experiences to date indicate the design and construction of an individual remedy costs about $7.2 million. The Federal government pays for 90% of this cost, with the State picking up the remaining 10%. Construction can take a year to complete.

Once a site has been cleaned up, we conduct operations and maintenance activities to make certain the remedy is effective. The Federal government pays for 90% of these costs for the first year, and the State pays the remaining 10%. Thereafter, the State picks up all O&M costs.

Sometimes, sites pose an immediate threat to human health or the environment. In these cases, there is no time to conduct a comprehensive study.

If the responsible parties do not act, or cannot, we must be able right away to address known explosion hazards, threats of human contact, or the possibility of fire. We do this using our emergency response authority.

A typical removal action takes from one to six months to complete, depending on the individual characteristics of the site. Some have cost in excess of $1 million, but the average cost is $330,000. When the government conducts an emergency cleanup, the entire cost is borne by EPA.

Using the numbers I have just reviewed, all based upon over four years of first-hand experience, we have been able to project our resource needs during the next five years. Several important assumptions are built into these estimates:

o The Federal program will start engineering feasibility studies at 130 new sites annually.

o Responsible parties will undertake a gradually increasing number of new starts each year, beginning with 50 in 1986 and growing to 90 in 1990.

o There will be 238 emergency cleanups annually, including 190 by the Federal program and 48 by responsible parties.

Because each step in the cleanup process -- studies, design, construction, and O&M -- takes a different amount of time, the overall program operates like a pipeline. Thus, while we start roughly the same number of new sites each year, over time we find ourselves managing an ever-increasing total number of sites in various stages of cleanup, simultaneously.

This is a critical concept in understanding the limitations I see on how fast we can clean up our priority sites. It is a complex management problem. My concern is that we will allow ourselves to think that the more money we spend in a given year, the more cleanup we will accomplish.

I am convinced that there is a practical limit to the number of sites we can deal with at one time. And I am convinced that we are rapidly approaching that saturation point.

Allow me to demonstrate the pipeline effect I have just described. Our projections show that the number of new starts annually will increase very slowly, due entirely to a gradually increasing number of private party cleanups. Yet between 1986 and 1990, the number of sites with remedial activity underway will grow dramatically.

In 1986, we expect to start 180 new engineering feasibility studies, including 50 by responsible parties. That's the front-end of the pipeline. But on-going work at other sites means we will actually be managing 584 long-term sites at the close of that year. By 1988, we expect to start 200 new planning studies, including 70 by responsible parties. Yet, because of the pipeline effect of on-going work, we will be managing 726 remedial sites in various stages of cleanup.

And, by 1990, we will see 220 new starts, including 90 by responsible parties. But we will be managing a total of 811 long-term sites, each with unique circumstances.

And don't forget, we expect to be involved with 238 emergency cleanups in each of those years on top of our remedial projects. So by 1990, we will be dealing with well over 1,000 sites, all at the same time.

I say to you without any reservation, this is the ultimate management challenge. The American people have very high expectations from the Superfund program. I am committed to fulfilling their reasonable expectations. I fear that a program any larger than the one I have just outlined could collapse of its own weight. The resulting waste and fraud would be devastating.

Congress and the American people must recognize the many constraints that we are dealing with in trying to implement Superfund. This is a multi-billion dollar program. The sheer size of the fund makes it a prime candidate for abuse. I will do all I can to prevent this through rigid systems of accountability. I ask your help in allowing me to retain the flexibility I need to succeed.

In addition, we face several other constraints:

o Technical Constraints: Depending on the level of cleanup required by a reauthorized Superfund law and any prohibitions against off-site remedies, landfill capacity will be a critical issue in the years ahead. Presently, there are few double-lined facilities which can accept waste. There may be regional shortfalls, at times caused by transportation problems.

o Permanent Solution Constraints: No one wants wastes from one Superfund site to contribute to the problems of future priority sites. There are some promising technologies on the horizon that provide alternatives to land disposal, such as incineration and chemical and biological stabilization. Although some are proven feasible, their commercial availability remains limited. As demand for these technologies increases, we are hopeful available capacities will grow.

o Laboratory Capacity Constraints: Current national laboratory capacity is short of our needs. We are working to improve the reliability and responsivness of our contract labs, but problems remain.

o Managerial Constraints: As I have already suggested, we face an enormous management challenge during the next five years of Superfund. The pace at which the program is expanding, particularly as more and more sites move through the pipeline to the expensive design and construction phases, makes effective management difficult. In addition to overseeing the complex work at hundreds of sites, we must recruit and train professional staff, provide adequate workspace, obtain and maintain necessary equipment, provide administrative and logistical support, and establish the contract capacity needed to handle the additional workload.

o Personnel Constraints: In particular, we face a difficult challenge in finding, hiring and retaining people capable of carrying this program out. We are competing with the private sector for specialized talent. Often, we simply cannot offer the compensation, working environment and incentives that the private sector can for these individuals. Yet our engineers must oversee the work of theirs. Our managers must supervise the technical and administrative activities associated with hundreds of projects. And our attorneys must go head to head with the best lawyers the private sector has to offer in multi-million dollar litigation.

Let me stress at this point that I am not painting a picture of gloom and despair. We have, during the past four years, built a very effective cadre of managers, technical people, scientists, engineers and lawyers. But we must continue to build our team while, at the same time, working to retain the excellent people we already have.

In this area of people, we find the Federal system is one major impediment to faster expansion of our technical capabilities. It takes an average of four months to bring on an entry-level hydrogeologist, chemist or environmental scientist. These people, despite their qualifications, require a period of time for training to understand the program, the Federal system, and their roles in it.

At the senior level, the problems are even greater. We face the same rigid recruitment system. And there are not enough well trained people with experience in hazardous waste cleanup. The private sector is a fierce competitor for these talented men and women. Many times, we are simply priced out of the market.

Let me recap, then, my concern over the expectations I think exist among many members of Congress and a large segment of the American people who think getting the cleanup job done faster is nothing more than a matter of dollars. It isn't.

In 1990 alone, we will have work underway at more than 1,000 long- and short-term sites. That's a management challenge.

At every site, we face difficult technical problems, laboratory constraints, and the prospects of disposal capacity shortfalls. Those are management challenges.

And we are engaged in fierce competition with the private sector for talented, well-trained professionals needed to make this program work. That's a management challenge.

The program we have put forward in the form of S.494, the Administration's proposal to reauthorize Superfund through 1990, is a blueprint for achieving significant cleanup in light of all of these constraints. It is carefully thought out and based on first-hand experience. It will buy a substantial amount of cleanup. It will give us powerful tools to foster a significant chunk of private-party cleanup in addition.

Our bill will yield some $7.5 billion worth of cleanup through 1990, including $5.3 billion in Federally financed work and another $2 billion or so in private-party cleanup. These resources will purchase impressive amounts of cleanup. By 1990, we project that we will have undertaken 1,450 engineering feasibility studies, about 1,000 designs, and approximately 900 construction projects. Remedial work will be completed at well over 600 sites. In addition, we expect to have conducted nearly 1,900 emergency cleanups.

We will not be finished with the Superfund mission by 1990. But we will have made a significant dent in the problem. We will be well on our way to achieving one of the most ambitious environmental goals ever set.

The next question that comes to mind is where will we get the $5.3 billion needed to make this program work? The Administration is convinced these funds can be raised in a way that is fair and equitable, without having any impact on the national deficit.

We have proposed a program financed largely through taxes on petrochemical feedstocks and hazardous wastes generated in the manufacturing process. Other important components in our financing scheme are interest on Fund investments and recoveries of past Fund expenditures from responsible parties.

Our current feedstock tax would continue without change. We have found it to be a reliable source of significant funds, yet one that has not hurt the competitiveness of our chemical producers. We are concerned, however, that an expansion of this particular tax could do harm to the chemical industry.

The waste-end tax we have proposed will generate some $600 million annually in new revenues. Its design reflects our belief that those companies generating hazardous wastes, and profiting from the activities that yielded those wastes, are logical candidates to help finance our expanded cleanup program.

Although the same companies that pay the feedstock tax will also contribute through the waste-end mechanism, this taxing scheme will also bring into the system thousands of other companies that have not paid their fair share in the past. We think this adds some needed equity to our effort to raise the substantial funds required to finance the next five years of cleanup.

We are convinced that there is no need to tap general revenues to fund Superfund. These taxes, plus interest and recovered costs, will provide us with the revenues we need to succeed.

Let's look quickly at the cost-recovery element of our financing equation. We expect, over the next several years, to see cost recovery become a major source of cleanup funds. There has been some concern to date over the slow pace of cost recovery.

Much of the explanation is related to the fact that cost-recovery cases cannot be initiated until much of the cleanup work has been completed. And, as we all know, it has only been in the past two years or so that the actual pace of cleanup has picked up.

Costs recovered to date total nearly $12 million. But we have initiated cost-recovery actions in cases worth more than $124 million. Just as the number of sites cleaned up will depend upon the remedial pipeline I discussed earlier, so too will the pace of cost recovery.

As a rule of thumb, cost recovery takes two to three years to complete for each site. In cases where we have conducted a removal action, cost recovery is initiated within one year after the emergency action is completed. Funds are not likely to be recovered, however, until about two and one-half years after completion of the removal.

In cases of long-term cleanup, cost recovery is initiated during the construction phase. But we do not expect to actually recover our funds until about two years after construction has been completed.

Now that we have a significant number of projects well into the cleanup process, we are beginning to take more and more responsible parties to the courthouse to recover our expenditures. Our earlier investments should pay off in the next five years.

In 1986, we expect to receive nearly $32 million in recovered costs. That will increase to nearly $55 million in 1987, and grow to $190 million in 1990. The total of recovered costs from 1986 through 1990 is expected to be $477 million. This will be a significant supplement to our tax revenues.

Finally, we anticipate that our aggressive enforcement program will yield some $2 billion in actual cleanup work by responsible parties through 1990. These will be funds from private sources, not out of Superfund.

Our record of private-party cleanup settlements has been an impressive one during the past two years. By effectively using the current enforcement tools, including strict, joint and several liability, we have been able to convince more and more responsible parties that it is in everyone's best interest to reach an acceptable settlement and get on with cleanup.

Through 1990, we project that responsible parties will complete more than $2 billion worth of cleanup. During that same period of time, we anticipate that the value of cleanup started by responsible parties will approach $3 billion.

Let me conclude now by restating what I have been saying for a long time. Superfund is a vital program. It is one of EPA's top priorities. Reauthorization of Superfund is our number one legislative goal.

During the past two years, we have put Superfund implementation on a sound footing. The program has expanded dramatically. We are seeing important results. It is absolutely essential that Superfund be reauthorized this year in order to keep our cleanup efforts moving at the pace we have established.

I am convinced that we are approaching the point where Superfund is operating at an optimum level. By the end of 1990, under our proposal, we will be working at more than 1,000 long- and short-term sites. Beyond this level of activity, there is a very real possibility that the program could begin to lose the management accountability that we have worked so hard to establish. The last thing we need is for Superfund to become tainted by charges of mismanagement, waste, fraud and abuse.

In addition to my concern that if we go past the Administration's proposed funding level we will do nothing more than throw money at the problem, I have also tried to lay out before this Committee the managerial, technical and administrative constraints that do in fact affect our program.

Our proposal is a sound one, based on first-hand experience and a recognition of the complexity of our mission. I urge you to adopt it. Thank you for allowing me to be here today. I would be happy to answer your questions.

STATEMENT OF MIKEL ROLLYSON, TAX LEGISLATIVE COUNSEL, DEPARTMENT OF THE TREASURY, WASHINGTON, DC

Mr. ROLLYSON. Thank you, Mr. Chairman. I presume my full statement will be entered into the record.

Senator PACKWOOD. All of the witnesses' statements will be in the record in full.

Mr. ROLLYSON. Thank you.

I would like to make a few brief comments about how we would propose to fund the Superfund over this 5-year period to reach the $5.3 billion of revenues that Mr. Thomas has outlined will be needed to carry out the program that he has envisioned.

First of all, we are not proposing any changes in the feedstock tax that is currently in existence. We do not propose that any new chemical substances to be added to or any chemical substances to be deleted from the existing feedstock taxes, nor do we suggest that there be any change in the rates of tax currently imposed on the feedstock taxes.

Thus, the feedstock taxes would continue to contribute approximately $300 million per year to the Superfund.

We are proposing, in the administration's bill, however, that the principal funding source be a waste management tax. Now, the original administration proposal that was introduced recently was based principally upon a 1981 EPA survey of hazardous waste volumes and management practices.

Since the introduction and release of that bill, we have had numerous meetings, conversations, and dialog with industry representatives, and they have contributed significantly to our database about existing volumes and the impact that the proposal would have on various industry segments.

As a result of those meetings, we have revised to some extent our proposal, and what I would like to do now is briefly describe the revised administration proposal.

We would impose an excise tax on the management of all hazardous waste at a waste management unit subject to permit requirements under the Resource Conservation and Recovery Act, which we refer to as RCRA. The tax would be imposed on a wet-weight basis on any waste identified or listed under section 3001 of the Solid Waste Disposal Act as of the date of enactment. Waste subsequently identified or listed as hazardous waste would not be subject to the tax, absent a congressional decision to add those wastes to the list of taxed substances. That is a change from the bill as originally introduced.

The rates of tax that would be assessed—and the tax would be assessed on the receipt of the hazardous waste at a waste management unit—would vary. The rate of tax on wastewater facilities would be 25 cents per ton over the reauthorization period. That is a rate substantially lower than the rate originally proposed, as a result of our meetings and the additional data that we have received about the volumes of wastewater in the system.

In addition, the rate of tax on hazardous waste received at injection wells would be $5 per ton over the reauthorization period.

Hazardous wastes received at landfills, surface impoundments other than impoundments contained in wastewater or deep well injection facilities, and hazardous waste received at waste piles or land treatment units would be taxed at an initial rate of $35 per ton, increasing over the reauthorization period to a final rate of $40 per ton.

All other facilities receiving hazardous waste would be taxed at an initial rate of $6 per ton, increasing to $7.80 per ton over the reauthorization period.

In addition, the bill contains an adjustment formula; that is, if the volumes and rates applied to those volumes do not produce the anticipated amount of revenues, the rates would be automatically adjusted in subsequent years so that we would ensure that there would be a stable and constant source of funds for the Superfund.

The waste management tax is expected to raise approximately $600 million per year.

The tax would not be imposed with respect to hazardous wastes that are not managed in RCRA waste-management units, nor would it be imposed on certain waste generated prior to the date of enactment that are received at waste-management units from CERCLA-required removal or remedial actions, or from RCRA corrective actions, nor would it be imposed on waste generated at Federal facilities.

I would like to comment just briefly about each of these taxes—the feedstock tax and the waste management tax.

The feedstock taxes were enacted by CERCLA, and they reflect the policy decision that Federal Government action taken to clean up and contain spills or threatened or actual releases of hazardous substances, and the payment of damage claims when responsible parties are not known, should be funded by the producers and users of hazardous substances rather than by the general public.

The feedstock taxes have been criticized, as has been mentioned here today, on the grounds that the tax collected from any firm is not based upon the firm's actual experience from hazardous substances and that it provides, at best, a form of rough justice. While these criticisms are not without merit, the taxes were imposed in recognition of the fact that there are present and future environmental costs associated with the use of these substances. By taxing the basic building materials used to produce hazardous substances and waste, these costs are borne by the persons who are utilizing hazardous materials.

Again, I want to emphasize that we do not propose to expand in any way the list of chemicals that are subject currently to the feedstock taxes. We do not support, at this time, such an approach, because we believe the waste management tax—as I will comment on briefly—better taxes those persons who are creating the hazards to our environment and to our health.

Finally, I would like to say that the feedstock tax has provided a very stable source of revenues. Currently the tax is generating, as I said, approximately $300 million per year, and the Internal Revenue Service and the Treasury Department has not experienced any substantial difficulties in administering the feedstock tax.

Let me just make a few comments about the proposed waste management tax. We estimate that the tax would raise approximately $600 million per year. It would be paid by the industries that generate hazardous waste believed to be responsible for many of the existing Superfund sites.

Because a closer relationship exists between the generation of hazardous waste and Superfund spending than between the use or production of feedstock chemicals and Superfund spending, this tax more appropriately allocates the environmental cost associated with the use or production of hazardous substances. Data we have received from various industries indicates that the waste mangement tax would be borne, to a large extent, by the same taxpayers who currently pay feedstock taxes. However, the tax would expand somewhat the base of taxpayers who are funding the Superfund, as it would be imposed on a number of taxpayers that are not subject to the current feedstock tax.

I want to note that there are a number of other legislative proposals for the reauthorization of Superfund which would tax the general public by appropriating funds from general revenues, or would tax corporations whose practices may have no connection to the problems that Superfund addresses.

These broadbased taxes have the support of those industries that are subject to the feedstock taxes and those that are expected to pay the waste management tax. We understand the interest these industries have in urging Congress to enact a broadbased tax.

We, however, support the congressional decision made at the time of the enactment of CERCLA to fund Superfund expenditures by imposing the environmental cost of using hazardous substances on the industry segment that uses or produces such substances.

The administration proposal, therefore, relies upon the waste management tax as its principal funding source for Superfund, while maintaining the existing feedstock taxes.

I would like also to note that the waste management tax is consistent with the RCRA system. It is essentially geared to and plays directly off of the RCRA system, and therefore it should not impose significant administrative burdens.

Finally, I would like to note that the tax is based on a wet-weight tonnage of hazardous waste received at a management unit. Using the wet-weight basis has several advantages. From an environmental standpoint, the wet-weight approach is more consistent with the EPA Regulatory Program and the congressional decision to encourage taxpayers to reduce the volumes of hazardous waste. A dry weight approach also would ignore the fact that many wastes are extremely toxic at low concentrations. Finally, the wet-weight approach will be significantly easier to administer.

At present there are approximately 5,000 facilities with permitted units. Due to the relatively small number of potential taxpayers, we believe this tax could be administered without great difficulty, and the Internal Revenue Service has estimated that the cost of implementing the tax would not exceed $100,000.

In summary, the administration proposal would provide principal funding for a 5-year $5.3 billion Superfund by imposing a tax on a wet-weight basis on the management of hazardous waste in interim status or permitted units. Additional funding would be obtained from the maintenance of the existing level of excise taxes on crude oil, imported petroleum products, and currently listed feedstock chemicals.

I would be glad to respond to any questions, Mr. Chairman.

[Mr. Rollyson's written testimony follows:]

For Release Upon Delivery
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April 25, 1985

STATEMENT OF
MIKEL M. ROLLYSON
TAX LEGISLATIVE COUNSEL
DEPARTMENT OF THE TREASURY
BEFORE THE
COMMITTEE ON FINANCE OF THE
UNITED STATES SENATE

Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss the provisions of S. 972, which contains the Administration's proposal for funding the reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"). CERCLA established and provides funding for the Hazardous Response Trust Fund, the "Superfund," which is recognized as the Federal Government's primary program for addressing dangerous environmental and health conditions created by the release of hazardous substances into the environment.

I want to emphasize this Administration's continuing commitment to protecting the public and the environment from the release or improper disposal of hazardous chemical substances. As the President stated in his recent State of the Union Address, reauthorization of Superfund is a top Administration priority. The Environmental Protection Agency ("EPA") has submitted a statement that describes the level of funding required for the Superfund and how those funds should be expended. It is our belief that the provisions of S. 972 provide an adequate, stable, and equitable financial base for the Superfund.

BACKGROUND

CERCLA provides the Federal Government with the authority to clean up hazardous substances released into the environment, to pay for restoration of natural resources caused by such substances, and to recover the costs of such cleanup and restoration from the parties responsible for releasing the hazardous substances. The response program is administered by the EPA and is financed by the $1.6 billion Superfund.

CERCLA authorizes appropriations to the Superfund equal to $44 million per year for fiscal years 1981 to 1985. The Superfund is principally funded, however, by excise taxes on crude oil, petroleum products, and certain specified chemicals. Section 4611 of the Internal Revenue Code imposes an excise tax of .79 cent a barrel on domestic crude oil received at a United States refinery or exported, on imported crude oil and petroleum products entered into the United States for consumption, use, or warehousing. Section 4661 of the Code imposes an excise tax on 42 listed chemicals sold or used by the manufacturer, producer, or importer of the listed chemicals. These taxed chemicals are either themselves hazardous or are the basic chemical components of nearly all other major inorganic and organic hazardous substances and hazardous wastes. The tax is assessed at rates ranging from 22 cents per ton to $4.87 per ton depending upon the chemical. The tax rates for crude oil, imported petroleum products, and the listed chemicals reflect a Congressional decision to allocate 65 percent of the Superfund tax burden to petrochemicals, 20 percent to inorganic chemicals, and 15 percent to crude oil and imported petroleum products. This allocation was based on estimates of hazardous waste generated by these broad industry segments at the time of enactment of CERCLA. The rate of tax on any chemical, however, is limited to two percent of its wholesale price as of 1980, and in many cases is much less.

CERCLA imposes upon those who generate, transport, or dispose of wastes, the liability for damages caused by a release or threatened release of hazardous substances. Hazardous substances are defined to include those hazardous substances specified under various other environmental statutes as well as substances that EPA determines present substantial danger to the public health or welfare or the environment. Responsible parties may be held strictly, jointly, and severally liable for all response costs associated with removal and cleanup of hazardous substances releases and damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss.

Liability limits are fixed by statute. Generally, liability is limited to response costs plus $50 million. The liability limitations do not apply, however, if the release or threatened release is the result of willful misconduct or willful negligence or if the responsible person does not provide assistance and cooperation when requested by a public official. In addition, punitive damages up to three times the response costs incurred may be imposed if the responsible person fails without cause to provide remedial and removal action when ordered by the President.

CERCLA also established the Post-Closure Liability Trust Fund. This fund is obligated to pay all costs arising out of liability imposed by any law with respect to a hazardous waste disposal facility after its closure, provided the facility had received a permit under Subtitle C of the Solid Waste Disposal Act and complied with other regulatory requirements designed to protect against future releases of hazardous substances. Thus, if these prerequisites are satisfied, future liabilities arising from the closed facility are shifted from the responsible parties to the Federal Government. The Post-Closure Liability Trust Fund is funded with revenues collected under section 4681 of the Code, which imposes a tax on hazardous waste received at a qualified hazardous waste disposal facility. The tax is assessed at a flat rate of $2.13 per dry weight ton, and is imposed upon and collected from the owner or operator of the facility.

The authority to collect the taxes enacted by CERCLA, including the tax supporting the Post-Closure Liability Trust Fund, terminates on September 30, 1985.

DESCRIPTION OF THE PROVISIONS OF S. 972

S. 972 would fund a five-year, $5.3 billion Superfund by maintaining the existing level of excise taxes on crude oil, imported petroleum products, and currently listed feedstock chemicals ("feedstock taxes") and by imposing a tax on the management of hazardous waste ("waste management tax"). No chemicals would be added to or deleted from the list of taxed feedstock chemicals, and no change would be made to the present rate structure. The bill would not authorize appropriations from general revenues for the Superfund.

The parameters of the waste management tax component set forth in the Administration proposal were based principally upon a 1981 EPA survey of hazardous waste volumes and management practices. Since the introduction of the proposal, industry representatives have assisted us in revising and updating our data base. Based upon this new information, we are recommending that certain provisions of the waste management tax be modified. The following is a description of the revised Administration proposal.

The Administration proposal would impose an excise tax on the management of hazardous waste at a waste management unit subject to permit requirements under the Resource Conservation and Recovery Act ("RCRA"), effective October 1, 1985. The tax would be imposed on a wet weight basis on the receipt at a permitted waste management unit of any waste identified or listed under section 3001 of the Solid Waste Disposal Act as of the date of enactment. Wastes subsequently identified or listed as hazardous would not be subject to the tax, absent Congressional action. The tax also would be imposed on the ocean disposal of hazardous waste and on the transport of hazardous waste from the United States on or after October 1, 1985. The owner or operator of the permitted waste management unit or the exporter of the hazardous waste would be liable for the tax.

The tax would be assessed on the receipt of hazardous waste at a waste management unit subject to permit requirements under Subtitle C of the Solid Waste Disposal Act. The tax rates imposed would vary depending upon how the waste is managed. Hazardous waste received at waste water facilities would be taxed at a rate of 25 cents/ton over the reauthorization period; hazardous waste received at injection well facilities would be taxed at a rate of $5.00/ton over the reauthorization period; hazardous waste received at landfills, surface impoundments (other than impoundments contained in waste water or deep well injection facilities), waste piles, or land treatment units would be taxed at an initial rate of $35/ton, increasing to $40/ton over the five year reauthorization period; and hazardous waste received at all other permitted units would be taxed at an initial rate of $6.00/ton, increasing to $7.80/ton over the reauthorization period. The bill contains a formula for adjusting the scheduled rates beginning October 1, 1987 if amounts credited or appropriated to the Superfund for preceding fiscal years fall below projected revenues for the period. The authority to collect taxes would terminate when the sum of the amounts credited or appropriated to the Superfund during the reauthorization period total $5.3 billion. To ensure against subjecting the same volume of waste to multiple taxes, a credit would be provided for taxes paid with respect to hazardous wastes that are transferred from one permitted waste management unit to another.

The tax would not be imposed with respect to hazardous wastes that are not managed in permitted waste management units, to certain wastes generated prior to the date of enactment that are received at permitted waste management units from CERCLA required removal or remedial actions or from RCRA corrective actions, or to wastes generated by Federal facilities.

The provisions of CERCLA that establish the Post-Closure Liability Trust Fund would be repealed by S. 972, effective October 1, 1985, and the Post-Closure Liability Trust Fund would be terminated as of that date. Liability for certain damages from the release or threatened release of hazardous waste from waste sites after their closure would therefore remain with the responsible parties for such facilities. Taxes already collected from owners and operators of qualified hazardous waste disposal facilities under Code section 4681 would be transferred to the Superfund.

In summary, under the Administration proposal the Superfund would be funded by revenues generated by the existing excise taxes on crude oil, imported petroleum products, and feedstock chemicals, and by an excise tax on the management of hazardous waste.

DISCUSSION

Maintenance of the Current Feedstock Taxes

The Administration proposal would extend through September 30, 1990 the current excise taxes on crude oil, imported petroleum products, and 42 listed chemicals sold or used by the manufacturer, producer, or importer of chemicals. The feedstock taxes enacted by CERCLA reflect the policy decision that Federal Government action taken to clean up and contain spills or threatened or actual releases of hazardous substances, and the payment of damage claims when responsible parties are not known should be funded by the producers and users of hazardous substances rather than by the general public. The feedstock taxes have been criticized on the grounds that the tax collected from any individual firm is not based upon that firm's actual experience with hazardous substances and provides at best a form of rough justice. While these criticisms are not without merit, the taxes were imposed in recognition of the fact that there are present and future environmental costs associated with the use of hazardous substances. Prior to the enactment of CERCLA, however, these costs were not reflected in the price of the products made from such substances. By taxing the basic building materials used to make hazardous products and waste, these costs are borne by those persons utilizing hazardous materials.

Moreover, the taxed chemicals or derivative products of those chemicals appear in the response sites now being investigated by EPA. A nexus thus exists between the manufacture or use of the taxed chemicals and Superfund expenditures. It has been suggested that the list of chemicals subject to tax should be expanded to include other chemicals that have appeared in EPA response sites. We do not favor that approach. New sources of funds to support the Superfund should come, if possible, from taxes on the very substances that pose a threat to human health and the environment. We believe the waste management tax authorized in the Administration proposal would be more efficient than the feedstock taxes in taxing directly those persons that create hazardous wastes.

Finally, the feedstock taxes provide a stable source of revenue for the Superfund. Currently, revenues from these taxes total approximately $300 million per year. The Internal Revenue Service has not encountered substantial difficulties in administering the feedstock taxes.

Waste Management Tax

The Administration proposal would impose a tax on the receipt of hazardous waste at a unit subject to RCRA permit requirements that treats, stores, or disposes of the waste. We estimate that this tax would raise approximately $600 million per year.

The waste management tax would be paid by the industries that generate the hazardous waste believed to be responsible for many of the existing Superfund sites. Because a closer nexus exists between the generation of hazardous waste and Superfund spending than between the use or production of feedstock chemicals and Superfund spending, this tax more appropriately allocates the environmental costs associated with the use or production of hazardous substances. Data we have received from various industries indicates that the waste management tax would be borne to a large extent by the same taxpayers who currently pay the feedstock taxes. The tax would expand somewhat the number of taxpayers who are funding the Superfund, however, as it would be imposed on a number of taxpayers that are not subject to the feedstock taxes.

Other legislative proposals for the reauthorization Superfund would tax the general public by appropriating funds from general revenues or tax corporations whose practices may have no connection to the problems that Superfund addresses. These broad based taxes have the support of those industries that are subject to the feedstock taxes and those that are expected to pay the waste management tax. We understand the interest these industries have in urging Congress to enact a broad based tax. We, however, support the Congressional decision made at the time of the enactment of CERCLA to fund Superfund expenditures by imposing the environmental costs of using hazardous substances on the industry segment that uses or produces such substances. The Administration proposal, therefore, relies upon the waste management tax as the principal funding source for Superfund — while maintaining the existing feedstock taxes.

The waste management tax, by taxing the treatment, storage, and disposal of hazardous waste, is consistent with the EPA regulatory program. The regulation of the treatment of hazardous waste, as well as the regulation of disposal and storage of hazardous waste, under the Solid Waste Disposal Act, reflects the Congressional determination that there are risks associated with the management of hazardous waste. Under the proposed waste management tax, the lowest tax rates are imposed upon waste water treatment and deep well injection. Each of those waste management techniques involve the use of large volumes of water; the lower rates reflect the dilute concentrations of hazardous waste commonly associated with those such management techniques. Higher rates are imposed upon the management of concentrated wastes. The highest rate is imposed on the treatment, storage, or disposal of concentrated hazardous waste in or on the land, i.e., in landfills, waste piles, land treatment units, and surface impoundments (other than those contained within waste water or deep well injection facilities).

The tax would be based upon the wet weight tonnage of a hazardous waste received at an interim status or permitted waste management unit and collected from the owner or operator of the waste management unit. Measuring the tax by reference to wet weight tonnage, as opposed to dry weight tonnage, has several advantages. From an environmental standpoint, the wet weight approach is more consistent with the EPA regulatory program and the Congressional decision to encourage taxpayers to reduce the volumes of hazardous waste. A dry weight approach also would ignore the fact that many wastes are extremely toxic at low concentrations. Finally, the wet weight approach will be significantly easier to administer.

At present, there are approximately 5,000 facilities with permitted units. Due to the relatively small number of potential taxpayers, we believe this tax could be administered without difficulty. The Internal Revenue Service has estimated that the cost of implementing the tax would not exceed $100,000.

Superfund expenditures during the reauthorization period would be committed based upon amounts projected to be credited or appropriated to the Superfund during each fiscal year. To assure that funds are available as needed, the bill permits EPA to borrow from other Federal sources if revenues fall below projected levels and sets forth a detailed formula based upon actual receipts for adjusting the waste management tax rates beginning in October of 1987 to make up any such shortfall.

In summary, the Administration proposal would provide principal funding for a five-year, $5.3 billion Superfund by imposing a tax on a wet weight basis on the management of hazardous wastes in interim status or permitted units. Additional funding would be obtained from the maintenance of the existing level of excise taxes on crude oil, imported petroleum products, and currently listed feedstock chemicals.

* * *

This concludes my prepared remarks on the provisions of S. 972. I would be happy to respond to your questions.

Senator **Packwood**. Mr. Rollyson, you have got about $3 billion in waste-end taxes, as I look at it. Correct?

Mr. **Rollyson**. That is correct.

Senator **Packwood**. About a billion and a half in feedstocks?

Mr. **Rollyson**. For the 5-year period, do you mean?

Senator **Packwood**. Yes, I am talking about the 5-year period. And about a billion in what appears to be interest and penalties.

Mr. **Rollyson**. That is correct.

Senator **Packwood**. How is that divided between the interest and the penalties? The reason I ask about the interest, I have had experience with other administrations, not just this one but others in addition, of building up trust funds for a specific purpose and then not spending them. And I don't want to get into a situation where we are going to raise so much money that you are going to have enough interest off of this to fund it as if it were an endowed program.

Mr. **Rollyson**. Well, the breakdown between interest and penalties, Mr. Chairman, is roughly as follows, and these numbers will be very slightly off because we have recently revised the figures slightly:

In 1986, we have interest on investments estimated at $95 million; for 1987, $70 million; for 1988, $56 million; for 1989, $55 million; and for 1990, $59 million. Fines and penalties are very small.

Senator **Packwood**. What does that come to, about $300 to $400 million? I didn't add it up as you were going along.

Mr. **Rollyson**. Over the total period it would be about three and a quarter.

Senator **Packwood**. And the rest is penalties?

Mr. **Rollyson**. A very small amount of penalties. Five million dollars in penalties.

Senator **Packwood**. Well then, you only come to about $4.8 billion, then.

Mr. **Rollyson**. There is also a segment of recoveries, which I think Mr. Thomas probably could better explain than I could.

Senator **Packwood**. That you count as part of the income for the Superfund?

Mr. **Rollyson**. That is correct, Mr. Chairman.

Senator **Packwood**. Mr. Thomas, go ahead and explain that.

Mr. **Thomas**. The recovery portion reflects the estimates of what we will receive from recovery of costs from responsible parties after we have expended money from the Superfund. It is a major component of Superfund. It has been lengthy in its implementation to date, simply because we wait until we have completed a project before we pursue litigation. We have recovered approximately $12 million to date; we have about $125 million filed and in litigation. And as you can see, as the pace of the program increases, the pace of our litigation increases.

It ranges from an estimate of $32 million in 1986, $55 million in 1987, $85 million in 1988, $115 million in 1989, $190 million in 1990, for a total of $447 million.

Senator **Packwood**. So you have $4 to $5 million in what I will call penalties, or however you are going to get this, and $3 to $4 million in interest, if I added it up right.

Mr. **Thomas**. Yes, sir. The figures I have are just about that, about $4.5 in the taxes, about $335 or $340 in the penalties and interest, about $480 in the recovery, and then there was a little transfer.

Senator **Packwood**. All right.

Now, are you saying that you could not intelligently spend more than roughly $5.5 billion over the next 5 years? That even with an additional $2-3-4 billion, you could not hire the engineers, you could not hire the personnel, you could not intelligently hasten the pace of your activities?

Mr. **Thomas**. Mr. Chairman, we feel the pace we have proposed is the maximum pace at which the program should operate, for me to sit here and tell you with any kind of confidence that it can be managed properly. And it has to do with the availability of technical personnel, the capacity of our personnel to actually manage that number of simultaneous projects.

Senator **Packwood**. Do you mean available in the country?

Mr. **Thomas**. Yes, sir.

Senator **Packwood**. You can't hire any more?

Mr. **Thomas**. Yes, sir; we can hire them, but it has to do with the training that is required to supervise those kinds of projects; some of it has to do with just availability of particular categories of technicians such as hydrogeologists, which is a major category required in these kinds of projects.

Senator **Packwood**. If we decide to go with a figure close to what the Environment Committee has suggested, $7.5 billion, do you have any suggestions for funding that amount?

Mr. **Thomas**. No, sir; I don't, Mr. Chairman.

Senator **Packwood**. You would be opposed to expanding the chemical feedstock tax beyond where you are?

Mr. **Rollyson**. Well, I think what we are saying in this testimony, Mr. Chairman, is that we believe the waste management tax is a tax that is more directly geared to impose the tax on those who are creating the hazardous substances. Therefore, we think that is a more direct tax and has a closer relationship to those who are creating the problem than does the feedstock tax.

Senator **Packwood**. Are you satisfied, on the wet versus dry argument, that you can fairly—either you or Mr. Thomas—fairly come out with regulations that will satisfy most of the people involved?

Mr. **Rollyson**. Do you mean on a dry-weight or a wet-weight basis? I didn't quite understand the question.

Senator **Packwood**. Well, you are well aware of the argument in terms of the wet weight, and that it is an unfair method of assessment. It may well be. Are you satisfied?

Mr. **Rollyson**. We have our rate structure—and I understand your question. Our rate structure does reflect, to some extent, that certain of the substances have higher concentrations of hazardous waste than do others. That is one of the reasons we have adjusted the rate structure dramatically, so that the tax on wastewater treatment facilities which have very high concentrations of water and very low concentrations of hazardous waste are taxed at a very low rate—25 cents per ton. There is a graduated scale from the more dilute hazardous waste up to the more concentrated hazard-

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ous waste, to the point that we tax the most concentrated waste which is placed on the land, which generates the greatest harm or danger to the environment, at the highest rate of $35 per ton.

Senator PACKWOOD. Senator Heinz?

Senator HEINZ. Thank you, Mr. Chairman.

Going back to where the chairman was, if you assume that we are not going to increase the feedstock tax but that we are going to raise $5–6 billion additional revenue, so that you do get up around the environment and public works figure, how do either of you recommend that we do it?

Mr. ROLLYSON. I think what we are telling you, Senator, is that we don't recommend a program of that size. Mr. Thomas has said that the most efficiency can be gained at the $5.3 billion level. We have significantly increased the tax imposed on these industries through the proposed waste management tax. And I think it is perfectly clear that the administration is not in favor of any new broadbased taxes at this point in time, nor can we stand further significant damage to the budget deficit.

So I think we are saying that we strongly believe in the size of the program and the funding that is set forth here today.

Senator HEINZ. The administration is, however, proposing a new tax, the waste end tax. Is that correct?

Mr. ROLLYSON. The waste management tax is a new tax, yes.

Senator HEINZ. And that would raise $3 billion over five years, is that correct?

Mr. ROLLYSON. That is correct, sir.

Senator HEINZ. Do you believe that it is an efficient-to-administer tax?

Mr. ROLLYSON. Yes, sir, we do. We have spent a great deal of time exploring the waste management tax; since we had hearings last fall we have examined a number of alternative taxes, and we do believe that the waste management tax that is proposed here today could be administered fairly. We have received estimates from the Internal Revenue Service that it would not be a difficult tax to administer. And a lot of that derives from the fact that it plays directly off the existing RCRA system.

Senator HEINZ. Do you feel that it is somehow fair to get all the taxpayers, in this case they happen to be corporations, who are complying with the Resource Recovery and Conservation Act, an act designed to track hazardous wastes from cradle to grave so that it is safely disposed of at additional cost to all concerned and additional safety to all of our citizens, is it in any sense really fair to get those people, who are presumably doing things right, to pay for the costs of the sins of other people who are probably not them? Why is that equitable policy?

Mr. ROLLYSON. I think it is fair, Senator. The very fact that these hazardous wastes are subject to the regulatory system reflects a congressional decision that there are significant hazards presented to the environment through the handling of these wastes; even though the wastes are being handled in EPA-permitted facilities, they are extremely hazardous, extremely toxic, and they present a threat to the environment the whole way through the system. That is in fact why, as you say, they are monitored from start to finish.

Senator **Heinz**. Well, I could understand that if you felt that RCRA was ineffective, wasn't going to work, wasn't being observed, people were cheating.

But what we are really talking about with these thousands of sites is the sins of somebody else, for the most part. The biggest problem we have, as I think we all recognize, is that we are not going to get the kind of recoveries that we ought to be able to get here because the perpetrators have gone out of business. Isn't that right?

Mr. **Thomas**. Senator, the recoveries do reflect, certainly, a small portion of the total amount of funds that are expended. However, if you look at the total enforcement program, you will find that the $2.5 billion I spoke of, which actually comes through negotiated settlements, is very complementary to the amount of money we expend from the Fund itself. So, in a large number of the sites where we actually take action with responsible parties, we have viable responsible parties.

I might make just one point in response to your question, and that is, the tax that we have proposed is very consistent, as far as its thrust is concerned with the RCRA regulatory program that Congress authorized last year, and that is to move the waste away from land disposal. And we think, through the economic incentives and disincentives incorporated into this tax, it will complement the direction you gave us last year in our regulatory program.

Senator **Heinz**. My time is expired. Thank you.

Senator **Packwood**. Senator Long?

Senator **Long**. I don't have any questions, but I do want to ask that Senator Max Baucus's statement appear in the record along with the others.

Senator **Packwood**. Without objection it will be inserted in the record.

Senator Wallop?

Senator **Wallop**. Mr. Chairman, let me begin by asking if we may submit questions to these witnesses.

Senator **Packwood**. You may submit them, although I would hope we could submit them quickly and that they can get them back timely, because I would like to have a markup and get this out relatively soon.

Senator **Wallop**. I can understand that, but with a 10-minute time period it is virtually impossible to develop any great thesis, and it is a long witness list.

Senator **Packwood**. Actually it is a 5-minute time limit.

Senator **Wallop**. Well, five minutes, then.

Senator **Packwood**. But we go around and around and as many rounds on each witness as you want.

Senator **Wallop**. Well, I understand that, but when you say there are witnesses enough to keep us here until 3 p.m. in the afternoon if we don't speak—you know, the hammer works in both directions.

I would hope that Treasury might take time to rethink their position on the taxes, and take the time to look at the bill that Senator Bentsen and I have introduced, or Senator Bradley, which is slightly narrower but much broader than yours.

At the present moment, as I understand it, there are about 12 corporations that pay 70 percent of the tax, and my question to you: Is it not true that many if not most manufacturing processes create the wastes that go into a hazardous waste site?

I am thinking specifically of the Stringfellow site in California, which is composed largely of waste from the computer industry.

The problem that I have with the route that you are taking is that Congress, every time it adds a hazardous waste to the list, is going to be fighting a tax bill, too. And that's dumb. That really just doesn't make sense. It seems better that we recognize the process of creation of waste in the first place, make a tax that is as broadly based and as simple as it can be over the things which we know create waste.

It is, after all, a national problem. And it just strikes me that, first of all, that the benefit of going the way we are going is (a) nobody has an unbearable burden, and (b) you don't have to have two bills every time you have one bill in the area of hazardous waste.

Mr. **Rollyson**. I can comment on the tax policy question, and maybe Mr. Thomas can comment on to what extent the manufacturers are contributing to the problem.

There certainly are arguments for broadening the tax base, and I think they are the arguments that you articulate, Senator, for broadening the tax base. There are tax policy reasons for doing that. However, there are also countervailing domestic and economic policy reasons for not imposing at this time any broadbased corporate taxes. The recovery is in process right now, which I think still is pretty vibrant, but there are some signals that a broadbased tax would be damaging. And I think the President has made it fairly clear.

Senator **Wallop**. Are you suggesting to me that a tax of one-half of one percent is going to overpower this recovery?

Senator **Bradley**. It is very fragile.

[Laughter.]

Senator **Wallop**. It must be. I think it has already failed. I think if your suggestion carries any merit at all, we are done.

Mr. **Rollyson**. I think the President has indicated, Senator, that any new broadbased tax right now is not appropriate.

Senator **Wallop**. So you are going to take one segment of the economy and burden it to the point where it can fail, and let the rest bear that burden?

Mr. **Rollyson**. We have had a lot of discussions with industry, and we are certainly striving, Senator, to impose a tax that does not cause such economic damage as you suggest.

Senator **Wallop**. But you have proposed just such a tax.

Mr. **Thomas**. Senator, if I could respond to the other part of your question, which is: Aren't we finding that the waste at the sites are largely deposited by broader group of the manufacturing sector and others than just the producers of the feedstocks? The answer to that is yes. It is the result of two things. One is, they do generate waste in a broad variety of locations and manufacturing processes in this country, and we feel the waste management tax which we have proposed does broaden the tax base and incorporate funds from a far broader sector of the manufacturing element than the feedstock.

The feedstock tax, which we recommend continuing, the whole concept was to tax at a very early stage in the process, and then derivative products throughout the manufacturing sector would pick up through increased prices a part of the burden of that feedstock.

So both taxes, I think, carry with them the reflection that there is a broader sector there that is generating and disposing of the waste.

Senator Wallop. Mr. Chairman, my time is virtually up, but I would make the observation that I think the thing that needs broadening, more perhaps than the base of the tax, is the view of the administration over the nature of the problem and who causes it.

Senator Packwood. Senator Chafee?

Senator Chafee. Thank you, Mr. Chairman.

I think one of the debates we are going to have here is, over the whole theory of the waste management tax, whether that is an effective way of collecting revenues.

Now, one of my concerns is—and I address this to Mr. Thomas: As you know, before we made the amendments to RCRA, there were certain loopholes that existed, for instance, the permission of burning of the waste in boilers, and we tightened up on that loophole.

What worries me is that we are going to create a tremendous incentive to seek out new loopholes in the amendments that we made in 1984. We thought we foresaw loopholes, but I suspect with the financial incentive that will exist on the part of disposers to find loopholes, and thus the avoidance of the waste-end tax will be very high. What do you say to that?

Mr. Thomas. Well, Senator, part of that is why we suggested in our proposal that the waste management tax be across all waste management units, to incorporate all of the waste at its storage treatment or disposal stage, to deal with that issue as well as the administrative issues which have been mentioned earlier.

From our review, we don't feel that is a potential problem.

Senator Chafee. But of course, it would still be limited to RCRA facilities. I mean, those are the only facilities you can dispose at. Then some ingenious person comes up and has a system of disposing that gets around a RCRA facility.

Could you make your answers brief, because unfortunately I have to go.

Mr. Thomas. Let me let Dr. Skinner, who manages our RCRA hazardous waste program, to respond as well.

Senator Chafee. All right. In 30 seconds or less, Doctor.

Dr. Skinner. Yes. With all of the new amendments that were placed under RCRA last year, we will be regulating boilers, we will be regulating many other types of activities that were not regulated in the past.

I can't think of any major loophole that could spring up and escape the regulatory system.

Senator Chafee. Well, neither could we when we did the amendments.

However, let me ask you the next question: Are we going to get into a conflict here? We've got RCRA regulations in effect for, for instance, land disposal. And over the series of years you are to prohibit land disposal of chemical A, B, and C, as you proceed.

Then, on top of those regulations, we come with the IRS regulations. After all, Treasury is going to now be in the act. Isn't that going to be a difficulty? You have two different sets of proposals. What does Treasury know about regulations on hazardous waste disposal in landfills?

Mr. **Thomas**. Senator, they have learned a lot during the last year.

Senator **Chafee**. Well, I don't know where they learned it; they haven't done it.

Mr. **Thomas**. Well, let me say that the proposal we have made fully takes into account the proposed regulations for banning waste from land under RCRA. And the Treasury officials have been working directly with us as we worked through those proposals—the hazardous waste regulatory staff, and the Treasury tax policy staff working jointly. I would anticipate that is exactly the way we would work as they developed their regulations.

Senator **Chafee**. All right. Now, let's assume that under the regulations from Treasury they are going to get a lot of money from land disposal of dioxinals. And then you come along, and you get up to prohibiting the land disposal of dioxinals as is required under RCRA. You are presented with a conflict. You are getting a lot of revenue to the Superfund fund from the waste-end management tax on dioxinals. You are presented with a conflict. How do you resolve that?

Mr. **Thomas**. Senator, we have made very conservative assumptions on the results of the land disposal bans in our revenue projections for the waste management tax, and that is built into our revenue assumptions—they are very conservative. I would be extremely surprised if our regulatory program comes out at the ranges we have incorporated.

We have assumed, for instance, dioxin bans; we have assumed solvent bans. So all of those things are incorporated into our revenue projections.

Senator **Chafee**. Under your estimates you have presented here, you have $600 million revenue from the waste management tax. It is my understanding that no one else has come up—at least the Joint Tax Committee has not come up with such a high figure. And indeed it is my understanding that the revenue estimates for States that have a waste-end tax have been extremely disappointing. Yes or no on that?

Mr. **Thomas**. Well, it certainly has varied quite a bit in the States. We looked closely at them. As the States have developed their experience with waste-end taxes and have revised some of their regulations, we find that they are having a positive experience.

Mr. **Rollyson**. Senator, we have been in a dialog with the Joint Committee. I do not know that they have actually estimated the revenues that would be produced by this bill, but we have had a dialog with them and they will be doing that. And I do not think there is any disagreement at this point on the fundamental basis.

Senator **Chafee**. Thank you, Mr. Chairman.

Senator **Packwood**. Senator Bradley?

Senator **Bradley**. Thank you very much, Mr. Chairman.

Mr. Rollyson, I suppose, coming before the committee today knowing that we are interested in raising the revenue to clean up the toxic waste, that you have read the bill I introduced and the bill Senators Bentsen and Wallop and Mitchell and Chafee—you have read all of those bills?

Mr. **Rollyson**. Yes, sir.

Senator **Bradley**. And I know you really don't want to take a position on this, but let's assume you are coming before the committee and we are seeking your advice. Let's say you have a gun to your head, and you have to choose between increased feedstock or broadbased tax. Which would you choose?

Mr. **Rollyson**. Which would I choose?

Senator **Bradley**. If a gun is at your head.

Mr. **Rollyson**. Between the bills that have been introduced?

Senator **Bradley**. Yes.

Mr. **Rollyson**. For a net receipts tax, or a value-added tax, or an E&P tax?

Senator **Bradley**. No. Would you choose an increase in feedstock taxes, or some form of broadbased tax?

Mr. **Rollyson**. I think if that were the choice, we would be consistent with our approach here, to tax those taxpayers and to tax the production and use of the hazardous materials, and we would favor looking at the feedstock tax as opposed to looking to a broadbased tax.

Senator **Bradley**. So you are saying you would favor an increase in the feedstock tax?

Mr. **Rollyson**. No, I am not saying we would favor an increase in the feedstock tax. But if the only alternative was that——

Senator **Bradley**. I said if you had the choice between a broadbased tax or an increase in the feedstock tax. You say you want to increase the feedstock tax.

Mr. **Rollyson**. If those were my only choices, Senator, yes.

Senator **Bradley**. And the rationale for that is that they are the producers?

Mr. **Rollyson**. It is consistent with the 1981 legislation, the congressional decision, that we did want to impose the tax on those taxpayers who were using hazardous materials or were engaged in manufacturing processes using the basic building blocks that lead to the production of the hazardous wastes.

Senator **Bradley**. Mr. Thomas, under the law, how do you determine whether someone is responsible? Let's say I own a site. Am I the responsible party?

Mr. **Thomas**. Yes, sir. Under the law, owners and operators, both current and past, are responsible parties.

Senator **Bradley**. So that you would seek to recoup costs from the owner. Is that correct?

Mr. **Thomas**. That is correct, as well as all other responsible parties.

Senator **Bradley**. All right. Well, I think one thing we might do at this hearing is make the record a little clearer as to who the owners are of some of these sites, and therefore who the responsible parties are. I have a long list here of owners of Superfund sites. They are not all oil companies or chemical companies. You have the Bloomington Herald Telephone, you have the Brownstone Inn, you have the CBS Records, you have the B&W Investment Company, you have a couple of banks. The point is, if these are the responsible parties, you've got the Baptist Foundation of Texas. [Laughter.]

Senator **Bradley** [continuing]. You've got the Biltmore Plaza, you have the First Valley Bank, you have the Galveston County Health Department, you've got the Holiday Inn, you've got JH Realty. I mean, it seems to me that there are a lot more people either responsible for these or involved than simply those that are going to be taxed through the feedstock. Therefore, it seems to me that if all of those parties are either responsible for causing are now responsible under the law, that there should be a fairly strong argument for a broadbased tax.

Mr. **Rollyson**. Senator, the other side of the program that you gave us was our enforcement program. Clearly, the identification of those responsible parties through our enforcement program is evidence of the program being carried out aggressively. And we estimate $2.5 to $3 billion will be recovered from that broader segment than the taxpayers that we have identified for the Superfund taxes. So we are talking about an $8 billion program. Three billion of it we are anticipating getting from those very kinds of folks you talked about.

Mr. **Thomas**. Senator, I might add, I don't know what all of these taxpayers are doing that you listed. But, in fact, if they are——

Senator **Bradley**. They are owners.

Mr. **Thomas**. If they are generating and producing the hazardous waste which is subject to the RCRA system, then under the waste management tax they would be subject to tax when they dispose of those wastes. That is why our preference is the waste management tax as opposed to the feedstock tax.

Senator **Bradley**. One last question, Mr. Rollyson.

Is your only objection to a broadbased tax that it would raise taxes and that it would endanger the recovery? Is that your principal objection? In other words, is it an economic objection?

Mr. **Rollyson**. It is an economic objection, and also the narrower taxes, the feedstock and waste management, are more consistent with the original legislative directive.

Senator **Bradley**. Thank you.

Senator **Packwood**. Senator Mitchell?

Senator **Mitchell**. Following up on that, Mr. Rollyson, if I might, you are aware that of the broadbased taxes proposed in this committee—three plans have been mentioned—

Mr. **Rollyson**. Yes, Senator.

Senator **Mitchell**.—that would increase corporate taxes by less than a billion dollars a year. And you have suggested that you oppose that because it could impede economic recovery.

Under the Treasury's first proposed tax reform and simplification plan, and I have a page of that before me, "corporate tax receipts would increase in fiscal year 1986 by $23 billion, rising to $45 billion a year by 1990." Will you explain to us why an increase in corporate taxes of less than a billion dollars a year would impede economic recovery, but an increase in corporate taxes of, on average, $35 billion would not?

Mr. **Rollyson**. Yes, Senator. I think there are two responses to that. First of all, the proposals that have been put forth here for corporate taxes are not income taxes, and therefore they would be assessed on taxpayers on net receipts, gross receipts, earnings and profits, or value added. With respect to companies that may or may not even be showing a profit. And they were unrelated to the taxpayers who are creating the problem that we are here today to try to solve.

More importantly, in response to that question directly, those taxes are in the context of a revenue-neutral tax reform package. The administration is hopefully very soon going to be putting forward its proposal for tax reform, but it will be a revenue-neutral proposal.

Senator **Mitchell**. Well, it is not revenue-neutral to the corporations who have to pay $35 billion more in taxes.

Mr. **Rollyson**. A revenue-neutral package, however, should not have negative economic consequences. In fact, we believe the tax reform proposal would have very strong positive economic consequences. Any new tax without offsetting spending reductions or some other offset revenue, principally rate reductions, tax rate reductions, would have an adverse economic impact.

Senator **Mitchell**. So therefore, if Senator Chafee and I accompany our plan to have a broadbased corporate tax with a proposal to reduce individual income tax rates in the United States to an amount necessary to offset that, that would not meet your objection?

Mr. **Rollyson**. Well, that would be a revenue-neutral package, Senator, and I would have to look at the details of it.

[Laughter.]

Senator **Mitchell**. Well, let me ask you another question. You are proposing Superfund taxes of $4.5 billion to support a $5.3 billion package. You estimate the remainder to come from interest, fines, and cost recoveries. That is $800 million over a 5-year period.

In the more than 4 years that the program has been in operation, the total amount of recoveries from such sources has been $162 million. Would you explain to us why we can expect to recover more per year in the next 5 years than we have recovered in the aggregate in the past 5 years?

Mr. **Rollyson**. Well, I will speak to the interest. I think the interest is a rather mathematical computation based upon how the taxes have been collected and how the funds have been expended over the past period, and just extrapolating that into the future. I will let Mr. Thomas refer to the recoveries.

Mr. **Thomas**. The recoveries, Senator, are based on an analysis of the number of projects that would be completed each year, conservative assumptions on which ones of those projects would have viable responsible parties, conservative assumptions on the amount of time it would take to litigate, and what kind of results we would have from litigation.

It is based on the experience we have had, which you know has resulted in a relatively small amount of recovery money, but largely due to the timeframe in which the program has operated; we think that these are conservative assumptions, and actually the $477 million is significantly less than the staff gave me as an estimate.

Senator **Mitchell**. Mr. Thomas, we have been over this many times, but I would like to go over it one more time, because it is really relevant now.

You have estimated the cost without taking into account increases in the cost-per-site of cleanup. In 1981, the cost was $2.5 million per site; in 1983, $4.5 million per site; in 1984, $6.5 million per site; in 1985, $8.1 million per site. You now assume there will be no increase in the cost of cleanup per site. There is nothing in the record to support such a conclusion, and I would ask if you would explain to us on what basis you can make such an estimate.

Mr. **Thomas**. Senator, we have discussed it before and, as you know, we have done extensive studies of this. We have developed the $8.1 million estimate based on experience as well as those studies.

It is a projection. We don't think it will increase. We used it as a base. I have some reason to believe it could possibly decrease as we look at various factors such as the attempts we are making to try to decrease the cost of our engineering the studies, with the development of generic studies, the development of basic designs, decreasing the cost of designs, the concept of taking worst sites first. So we have a fairly high estimate on the construction costs.

So over the period of the 5 years, there are just as many arguments as to how these costs could actually go down as go up. We have done our best at coming up with an estimate that we think will hold, and it is the $8.1 million estimate.

Senator **Mitchell**. Every one of those arguments could have been applicable in 1982, 1983, 1984, and 1985. They were not. The result was just the opposite of what you projected. Common sense dictates that the cost will in fact increase over the coming years.

Mr. Chairman, I have a number of other questions. Will we have another round?

Senator **Packwood**. We will have another round.

Senator Symms?

Senator **Symms**. No questions, Mr. Chairman

Senator **Packwood**. Senator Grassley?

Senator **Grassley**. No questions, either, but I do have a statement I want to insert in the record, Mr. Chairman.

Senator **Packwood**. Your statement will be in the record at the start of the hearing.

Mr. Thomas, how do you solve the trade problem that the chemical industry has under the feedstock tax? The feedstock tax doesn't apply to derivatives, and therefore it puts them in a disadvantageous position in terms of import competition.

Mr. **Thomas**. The derivative tax on imports is a difficult problem, Mr. Chairman. We have difficulties administering a tax on derivative products for two reasons principally: One, there is a potential GATT problem with imposing such a tax. And, two, there are very difficult administrative problems, since we would need in some way to be able to look beyond the border to the foreign country in which the product was produced, to try to examine the chemical processes by which this product was created, if we are trying to impose an equivalent tax. So it is a problem. It is a difficult problem to solve, and I can't say that we have an easy answer to it.

Senator **Packwood**. In response to Senator Bradley's question, you said that if pushed you would prefer an expansion of the feedstock tax to a broadbased manufacturers or value-added or consumption or some other tax.

If we go beyond the recommendations of the administration and adopt the funding level recommended by the Senate Public Works and Environment Committee, or even a higher figure than that, would it be your intention, if it is financed by a broadbased tax, to recommend a veto?

Mr. **Rollyson**. Senator, I can't say at this time what the Treasury Department and what Mr. Baker would recommend in terms of a veto, nor do I know what Mr. Thomas would recommend in terms of a veto. In our Department, obviously, we have talked about the funding alternatives, and Mr. Thomas has said that he believes 5.3 is the most efficient-sized program that can be administered. Therefore, I think we would have to just evaluate it at that time.

Senator **Packwood**. Mr. Thomas, I want to get on the record once more—you cannot rationally administer more than the $5.3 billion over the next 5 years, that an additional $2 million would be impossible to intelligently digest and would be a waste?

Mr. **Thomas**. That is my assessment, Senator.

Senator **Packwood**. Senator Bentsen?

Senator **Bentsen**. First let me say, Mr. Chairman, I have a deep interest in this subject and wanted very much to be here, but as usual we have conflicts in schedule amongst our committees.

Mr. Rollyson, I understand that you said the IRS would have the authority to increase the waste tax rates if there is a revenue shortfall. Now, what incentive will IRS have to aggressively audit the tax? Couldn't those who pay the tax honestly and fully end up paying even more when the rates rise?

Mr. **Rollyson**. No, sir. The way the mechanism works, Senator, is that we have a revenue goal that is set forth in the statute to raise the amount of revenues that are necessary—the 5.3, which includes interest, penalties, and recoveries.

First of all, when that 5.3 figure is reached, the authority to tax would cease. So we are not going to collect more than the taxes necessary.

The adjustment mechanism is not a discretionary mechanism within the authority of the Treasury or the Service; it's an automatic statutory mechanism, that in the event the taxes collected from the waste management tax fall below the scheduled taxes that are built into the statute, then there would be an automatic adjustment mechanism which would increase the rates in future years to be sure that the revenues are collected on schedule.

Senator **Bentsen**. My deepest concern here is that we don't load the Superfund on too narrow a tax base. I just don't really think that is equity. And I think it is time that we face up to the fact that hazardous waste disposal is a societal problem, not just an industry problem.

We all benefit from products like plastic and nylon, and yet wastes are generated. Senator Wallop and I have done our utmost to try to structure a tax that would have that kind of a broad base.

And because of the limitations in time, I will not address that in detail.

But Mr. Chairman, I want to put my full statement in the record, if I may do so.

Senator **Packwood**. It will be in the record.

Senator **Bentsen**. And when I look at a waste-end tax, I think that it can be a useful component of a Superfund tax. But I sure don't think it can be a linchpin.

And then I look at feedstocks and see how it really is such a narrow base, and what would result therein in the way of penalties on the petrochemical industry, an industry that is already in trouble. I think that would be so onerous that we just shouldn't pursue that particular one.

I am also glad to see that my friend Senator Bradley has come up also with a broad based tax, and that is encouraging. But I would ask you, if you had the alternatives to choose from, whether feedstocks or waste-end, manufacturers excise tax, which one would you choose?

Mr. **Rollyson**. Senator, Senator Bradley asked me that question before you arrived.

Senator **Bentsen**. Well, he is a very bright fellow.

[Laughter.]

Mr. **Rollyson**. I will repeat it for you.

Senator **Bentsen**. No, I will read the record on that; I will get you on another one then, if I can. Let me see here.

Well, frankly, I just think our choices are pretty harsh and limited here. I know that some would go to general revenue, but with $200 billion deficits, I don't think that is realistic. And I think the increases in the feedstock tax would certainly be unwise and would not be equitable. And though I go for the waste-end tax, I don't think that can play a pivotal role.

I have looked at some of the estimates of raising $600 million a year by that. I don't believe it. And then I look at a situation where, from one version I saw of what the administration is thinking about, they are going to tax water. And I think that is a serious mistake, too. Can you comment on that? Are you going to go to dry weight, or are you going to go to wet weight?

Mr. **Rollyson**. Well, we prefer to stay with the wet weight. But we have had a number of conversations with industry representatives, and we have adjusted the rate structure that was contained in the original bill to reflect new data that has been brought to our attention through the industries.

We would significantly reduce the rate of tax on wastewater facilities, for example, from over $2.80 a ton down to 25 cents a ton.

Senator **Bentsen**. All right. But what are you doing on feedstocks?

Mr. **Rollyson**. Feedstocks? We are not proposing any changes in the feedstock taxes.

Senator **Bentsen**. No additional revenue from feedstocks?

Mr. **Rollyson**. No additional revenues from the feedstock. We would prefer to pick up the additional revenue from the waste management tax that we have here proposed, leave the feedstock tax as is, as a very stable source of revenues. But we believe the waste management tax is a fairer tax because it is better targeted to those producers of hazardous waste than the feedstock tax.

Senator **Bentsen**. Mr. Chairman, I notice my time has expired. Do we have hearings tomorrow?

Senator **Packwood**. Tomorrow and for the bulk of this morning and early afternoon.

Senator **Bentsen**. Would I have an opportunity, then, to deliver a somewhat emotional but hopefully articulate speech on the subject?

Senator **Packwood**. What about at 2 p.m. this afternoon? [Laughter.]

Senator **Bentsen**. I'll take a look at that. All right.

Senator **Packwood**. Senator Bradley?

Senator **Bradley**. Mr. Chairman, I am going to ask no further questions of these witnesses, because I am anxious to hear the next panel, on which we have a number of economists that will give us their views as to whether a very low broadbased tax will kill the recovery. [Laughter.]

Senator **Packwood**. Senator Mitchell?

Senator **Mitchell**. Thank you, Mr. Chairman. I have a statement that I will ask be placed in the record at the appropriate point, and I also would like to place in the record a report of the Congressional Research Service of the Library of Congress entitled "Capacity To Expand the Superfund Labs, Contractors, and Qualified Personnel." It directly contradicts Mr. Thomas's assertion made in response to a question by you regarding the ability of the EPA to effectively utilize any sum larger than the $5.3 billion that the administration proposes.

I will simply read a one-sentence conclusion from the report, which is: "The evidence reviewed for this report indicated that, with few exceptions, available facilities and personnel could support a substantial expansion of the Superfund program over the next 5 years." I think that the proper level of funding is an important question; it is obviously a subjective judgment.

[The report follows:]

Congressional Research Service
The Library of Congress

Washington, D.C. 20540

CAPACITY TO EXPAND THE SUPERFUND: LABS, CONTRACTORS, AND QUALIFIED PERSONNEL

by
James E. McCarthy
Specialist in Environmental Policy

Donald Feliciano
Analyst in Environmental Policy

Mark E. Anthony Reisch
Analyst in Environmental Policy

April 2, 1985

INTRODUCTION

The Superfund program 1/ was enacted in 1980 to authorize the Federal Government to respond to hazardous substance spills and releases of hazardous substances from disposal sites. The taxing authority of the law expires at the end of fiscal year 1985, and a central issue of the reauthorization debate is how large the fund should be for the next five years. When passed in 1980, the taxes and the authorization for Federal appropriations were set at levels designed to raise $1.6 billion over the 1980-85 period. That amount is seen by virtually all interested parties as inadequate to address the cleanup problem, and current proposals to expand the fund are in the $5-10 billion range for the 1985-90 time period. A key question in deciding whether to set the fund at the upper or lower ends of that range, or somewhere in between, is how fast the money can be spent effectively by the Environmental Protection Agency (EPA), which is the program's lead agency.

To help answer that question, the House Energy and Commerce Committee's Subcommittee on Commerce, Transportation, and Tourism asked the Congressional Research Service to examine four key components of EPA's ability to spend: (1) the availability of laboratory capacity to analyze the number of samples that will be taken at Superfund sites; (2) the availability of contractors for design and construction of remedial actions; (3) the availability of

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1/ The authorizing law is properly titled the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Public Law 96-510.

scientific and technical personnel to meet the demands of an expanded Superfund; and (4) the availability of treatment, storage, and disposal capacity to manage the waste generated by an expanded cleanup program.

CRS analyzed these questions by reviewing reports and other available data provided by EPA, its contractors, the Army Corps of Engineers, State governments, major trade associations, and firms engaged in Superfund cleanups. In addition, CRS conducted approximately 40 telephone interviews with individuals knowledgeable about aspects of the program.

The major conclusions of our report are summarized in the next section, Principal Findings. A more general discussion of each question individually is provided in the ensuing chapters.

1. PRINCIPAL FINDINGS

The evidence reviewed for this report indicates that, with few exceptions, available facilities and personnel could support a substantial expansion of the Superfund program over the next five years. In particular, the evidence suggests that:

1. Current laboratory capacity could support a substantial increase in Superfund remedial actions beginning in FY 1987;
2. There is general agreement that there will not be a shortage of firms to undertake design and construction of remedial actions;
3. With few exceptions, there appear to be ample scientific and engineering personnel to carry out an expanded Superfund program; and
4. It is not clear whether the adequacy of waste treatment and disposal capacity will constrain the growth of Superfund spending.

A. Laboratory Capacity

The EPA contract lab program (CLP), which analyzes most Superfund samples, "has doubled its demand on private sector analytical laboratories each year over the past four years." 2/ In the current fiscal year, the program will analyze about 69,000 samples.

The rapid growth of the program has caused some management problems, but the overall quality of lab analyses appears to be good. EPA points with pride

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2/ U.S. Environmental Protection Agency. Office of Solid Waste and Emergency Response. Extent of the Hazardous Release Problem and Future Funding Needs--CERCLA Section 301(a)(1)(C) Study: Final Report, [Washington, 1984], p. 3-11.

to the fact that it has not lost a single Superfund court case because of inadequate sampling and analysis.

Because sampling is used to define the nature and extent of a site's problems, the number of samples taken is highest in the early phases of site inspection, removal, and remedial investigation. Under the Administration's proposal for reauthorizing Superfund, these activities would show a sharp decline in the period FY 1987 - FY 1990 (see Table 1). Demand for sample analyses would peak at 75,810 in FY 1986, and would decline 63 percent by FY 1988, before leveling off.

Using the Administration's projections, this study estimates that the number of Remedial Investigations and Feasibility Studies could nearly triple by FY 1988, without increasing the current demand for lab analyses. In addition, current lab capacity could be expanded through better use of available facilities.

B. Contractors for Design and Construction

EPA projects a substantial increase in the number of remedial actions to be designed and constructed under the Superfund program beginning in the current fiscal year. The program will begin more design activities in FY 1985 than it did in FY 1981-1984 cumulatively. Construction starts in FY 1985 will be almost as many as in the previous four years. The Agency projects a further increase in both design and construction in FY 1986 and FY 1987 with activity leveling off in FY 1988 (see Table 2).

Despite the rapid increase in the number of remedial actions, there is general agreement that there will not be a shortage of firms to undertake design and construction. According to the American Consulting Engineers Council, over 300 firms have the direct or related experience to undertake Superfund remedial work. EPA, the Army Corps of Engineers, and the States have generally not experienced shortages of qualified firms.

TABLE 1: EPA Projections of Key Superfund Activities

Year	Total Samples	Preliminary Assessments	Site Inspections	Re-movals	Remedial Investigation/Feasibility Studies	
					Program*	Enforcement*
1984	62,416	3,774	1,265	204	97	36
1985	68,898	5,300	1,350	190	69	46
1986	75,810	5,500	1,488	190	78	52
1987	39,287	500	1,030	190	78	52
1988	27,985	100	50	190	78	52
1989	27,244	0	0	190	78	52
1990	27,244	0	0	190	78	52
1991	27,244	0	0	190	78	52
1992	27,244	0	0	190	78	52
1993	27,244	0	0	190	78	52
1994	27,244	0	0	190	78	52
1995	27,244	0	0	190	79	51

Source: EPA Superfund Budget Forecasting Model for all data except 1984 total samples. Latter is from ICF Incorporated, Superfund Laboratory Capacity Study, Draft Final Report (prepared for EPA Office of Emergency and Remedial Response, Hazardous Response Support Division, Washinton, D.C.), September 14, 1984, p. 12.

*/ Remedial investigation/feasibility studies (RI/FS) are conducted by two offices at EPA: the program office, if EPA anticipates a Fund-financed clean-up; the enforcement office, if EPA anticipates legal action to force a private party to clean up. The RI/FS is similar in either case, and in fact both offices use the same EPA contractors for the work. However, because of the greater likelihood of legal action, enforcement RI/FSs average 236 samples per site, whereas program RI/FSs average 179-213 samples each.

Table 2: Superfund Remedial Design and Construction Projects, 1981-1995 (data refer to the number of projects started in each fiscal year)

Fiscal Year	Design	Construction
1981-1984 (Cumulative total)	34	29
1985	64	25
1986	89	56
1987	88	92
1988	74	81
1989	74	74
1990	74	74
1991	74	74
1992	74	74
1993	74	74
1994	74	74
1995	74	74

Source: U.S. EPA, Superfund Budget Forecasting Model.

The major impediments to speeding construction activity have been administrative and procedural delays, not a shortage of bidders. EPA and the Army Corps of Engineers are attempting to improve procedures to shorten the contracting process.

C. Qualified Personnel

Cleaning up hazardous waste sites is a new activity, and comparatively few individuals have the precise educational and professional skills desired for Superfund site assessment and cleanup work. It takes time to hire and train appropriate individuals--several months for hiring, and perhaps as much as a year of on the job training before new personnel will be fully productive.

Within these constraints, however, there appear with few exceptions to be ample scientific and engineering personnel with the basic academic credentials for Superfund work. In the broad categories of interest (civil and chemical engineers, chemists, and geologists), the National Science Foundation projects surpluses of personnel ranging from 13 to 31 percent under the most restrictive assumptions. 3/ Among the more specialized occupational categories (toxicologists and hydrologists), hydrologists appear most likely to be in short supply, but several observers were optimistic that qualified personnel could be found.

D. Treatment, Storage, and Disposal Capacity

A fourth potential constraint to Superfund expansion is the availability of adequate treatment, storage, and disposal capacity for the hazardous wastes now leaking from Superfund sites.

3/ National Science Foundation, "Projected Response of the Science, Engineering, and Technical Labor Market to Defense and Non-Defense Needs: 1982-1987," Special Report NSF 84-304. [Washington, 1984], Table B-12, p. 43.

It is difficult to evaluate this concern, since EPA does not have projections of the volume of waste at Superfund sites. However, fragmentary information provided by the Agency suggests that the volume of waste to be removed for treatment or disposal off site is small enough that it does not now pose a significant demand on available waste treatment and disposal capacity.

At 11 Superfund sites for which EPA data were available, waste volume averaged approximately 3,000 tons per site. 4/ If this average is typical of all Superfund sites, EPA's projected level of removals and remedial actions will generate a peak amount of 846,000 tons of waste to be managed in FY 1987, with a slight decline in subsequent years. This amount is approximately three-tenths of one percent of the annual volume of hazardous waste generated in the United States (264 million metric tonnes), or 9 percent of the hazardous waste managed by commercial waste management facilities (9.4 million tons).

Whether an increase in the Superfund program's size would strain waste management capacity would depend on the methods chosen to manage the waste. If the waste is shipped to off-site commercial facilities, a doubling or tripling of the number of remedial actions might increase the demand for commercial services by 5 to 10 percent at the same time that new RCRA requirements were constraining available capacity. If Superfund waste is managed on-site, however, an increase in program size would not necessarily be constrained by the availability of commercial waste management facilities.

4/ U.S. EPA, Office of Solid Waste, Waste Management and Economics Division, "Superfund Waste Disposal Evaluation," June 29, 1984. The waste volume estimate was derived from data on pp. 7 and 23 of the report.

Senator MITCHELL. Mr. Thomas, you are a very skillful administrator, and you have the great respect of the members of the environment committee, including myself, before whom you have appeared many times. Therefore, your judgment is important.

I want to ask about your judgment in another area. When you testified before our committee last year, you said that the $5.3 billion figure over 5 years did not include any adjustment for inflation. I am now advised that your position is that it does include an adjustment for inflation even though the figure is the same, and that is because the Office of Management and Budget has reviewed the report and they have included a figure adjusting for inflation.

They also then reviewed your estimate of support costs necessary to support the cleanup, and reduced them—areas of personnel, cost of enforcement, and administration—by, lo and behold, a number that is exactly equal to the inflation adjustment that they put in.

I would like to ask this: How is it that the Office of Management and Budget knows more about personnel costs, costs of enforcement, and administration of this program than you do, even though you have been running it for several years?

Mr. THOMAS. Senator, it is unfortunate that I made that statement when we had the hearing not long ago, about inflation, because I did think that it did not include inflation, and it had to do with, just as you stated, basically the use of two different models—the model that was used by OMB as they priced out the administration's proposal versus the model that we used as we developed our cost estimates.

They did incorporate an inflated figure, the administration's inflation figure that they use in their budget estimates, for the $5.3 billion. But they used a lower model estimate, as far as our support costs are concerned—support management, interagency support, research and development, those kinds of components.

Senator MITCHELL. Lower than what you had projected?

Mr. THOMAS. It was a different model that was used. We used a model that did not take percentages at the level they took, and it was erroneous on my part when I said it did not incorporate inflation, because it did.

It is a difference of about $80 million a year over the 5 years, about $400 million when you look over the 5 year period of time.

What it came down to is that, I did not realize that a different model had been used when you asked me about that, very accurately, at the last hearing we had.

I would point out, Senator, that the report you referenced from the Congressional Research Service does not directly contradict the points I made. They also point out the technical personnel problems—the hydrogeologist problem I indicated—and they don't deal with the major problem I indicated, which is the major management problem of dealing with as many simultaneous projects as we have.

Additionally, there is the House Appropriations Subcommittee report, which recommends no more than a billion dollars a year as an appropriate figure to be appropriated.

There is also the Office of Technology Assessment report which points out many of the technical problems I indicated.

Senator MITCHELL. Thank you, Mr. Thomas.

Mr. Rollyson, has the Treasury Department reviewed the three different broadbased tax proposals now before the committee, basically one on corporate net receipts, one on corporate earnings and profits, and one on the value added to manufactured goods?

To the degree that you are able to express an analysis or a preference on those, were you asked that advice? I understand you are clearly opposed to all of them. But we ask you now for advice on them. Do you have a view on them, on the merits?

Mr. **Rollyson**. We have looked at each of those bills, Senator, and I think it is fair to say that each of them has their own discrete problems.

I think it would be fair to say that the manufacturers value-added tax is a tax that was given some substantial consideration in the Treasury's tax reform proposal. Volume three is devoted exclusively to value-added taxes.

In that proposal, the value added tax generally was rejected; but a narrow based value added tax such as a manufacturers value added tax was found to have very unfavorable economic distortions and have very difficult administrative problems.

So while I would not like to rank, the three taxes in any way, I think the manufacturers value added tax probably does have more problems than the other two.

Senator **Mitchell**. Could I ask, Mr. Chairman, if Mr. Rollyson could submit to the committee a written critique of the three proposals from the Treasury's standpoint, for our benefit in evaluating them?

Mr. **Rollyson**. Certainly, Senator.

Senator **Mitchell**. Thank you very much.

Senator **Packwood**. Any other questions of these witnesses?

Senator **Bentsen**. Yes; I would like to ask one, if I may, Mr. Chairman.

Do you think it makes sense to enact a tax that puts U.S. production at a competitive disadvantage to foreign production?

Mr. **Rollyson**. If you are asking does the waste management tax and feedstock tax exacerbate the international competition problem, I think it is inevitable to say, yes; it does. Any increased——

Senator **Bentsen**. All right. With that, then, let me say the Bentsen-Wallop bill, what it does, it takes the tax off of anything that is exported, and it puts that tax on anything that is manufactured and imported. And you can't do that with a waste-end tax. That puts the cost right on the U.S. producer, and the foreign producer doesn't have that tax on him.

Now, it seems to me that's a good reason not to make the waste-end tax a linchpin of the approach.

Mr. **Rollyson**. The international competition argument and problem is a problem, Senator. I think we recognize that throughout the economy and not just in this area.

The EPA section 301 study did look at the international competition issue, and I think their conclusion was that the additional cost that is attributable to the feedstock taxes or a waste management tax would really be dramatically dwarfed by other international economic problems.

Senator **Bentsen**. Well, the problem you have with that, though, is that each of these things adds to a competitive disadvantage. And we ought to stop it at any point we can.

One of the troubles in this country is, we don't make trade a priority, and we should. And every decision on a piece of legislation—you ought to be considering, "What happens to trade by taking this step?"

A good example of that is the deregulation of AT&T. We did it in this country with total disregard to what happened to trade. We said to the Bell companies, "You go buy that equipment any place you want to. No longer do you have to buy it from Western Electric," which is a subsidiary of AT&T. "You don't have to do that." That isn't the way the Japanese did it. They started to privatize Nippon Telephone and Telegraph, and they very carefully did it to try to moderate any kind of an impact on their trade, to try to protect in a situation like that what happened on their trade balances.

We ought to be thinking about that. And to say, for each of these, "Well, that one really doesn't make that much difference"——

But you keep adding those together—and we ended up last year with $123 billion trade deficit, and we are headed toward $160 billion this year, and we had fellows testifying here yesterday who said, "You know, I'm planning this year to put one-third of my manufacturing overseas." No; they said they had one-third overseas. And, "Then I'm going to half. And then I am going to two-thirds."

That has to concern us. If we erode the manufacturing base of this country, we cannot remain a great nation. We have to have a diversified manufacturing base.

Thank you, Mr. Chairman.

Senator **Packwood**. Gentlemen, thank you very much.

Let's move on to a panel of Charles DiBona, Dr. William Nordhaus, and Christine Beatty.

We will wait just a moment, Mr. DiBona, until the room clears and quiets down.

[Pause.]

Senator **Packwood**. All right, Mr. DiBona, why don't you go ahead.

Again, all of your statements will be in the record. You will be limited to 5 minutes.

STATEMENT OF CHARLES J. DiBONA, PRESIDENT, AMERICAN PETROLEUM INSTITUTE, WASHINGTON, DC

Mr. **DiBona**. Thank you, Mr. Chairman.

My name is Charles DiBona. I am president and chief executive officer of the American Petroleum Institute.

The API supports the cleanup of abandoned waste sites and favors reauthorization of CERCLA at a high level of funding.

My comments will focus on the level of spending, sources of funding, and scope.

First, as to the rate of buildup of spending during the next 5 years, it is important to separate the rate of buildup in this period from the question of the total spending required over the life of the program.

While today no one can confidently address the latter question, we believe that the buildup should be limited to a level that could be managed by EPA, which has stated it could manage effectively and efficiently a total of about $5 billion a year over the next 5 years.

Our own experience suggests that that would be an absolute maximum.

In addition, the efforts of private parties, State and local governments, and the Defense Department should bring the total cleanup to close to $10 billion.

Now, as to the source of funds. Currently, the petroleum and chemical industries pay almost all of the feedstock taxes that provide 87.5 percent of Superfund moneys. As Superfund spending increases, the funding base should be broadened, because the sources of hazardous waste are diverse and because the cleanup of abandoned waste sites benefits us all.

For example, at the Stringfellow site in California, EPA has identified 291 potentially responsible parties, very few of which are chemical and petroleum companies. Those responsible include a broad cross section of U.S. industrial, agribusiness, and government sources. And this is not atypical.

Although the oil industry's current feedstock tax payments represent more than the industry contributes to the problem, and even though it is causing the export of some of our industrial capacity, we would nevertheless support a continuation of the present petroleum and chemical feedstock taxes at $300 million a year.

The industry would also support a properly designed waste-end tax applied to dry weight and limited to $300 million a year.

We believe the administration's proposed waste-end tax is not a waste disposal tax and is defective for several other reasons addressed in our written report.

I might add that the explanation I have just heard of the waste management tax is not one that we agree with.

Beyond the $600 million a year total that a continued feedstock tax and a properly written waste-end tax would raise, the remaining funding should come from general revenues and from the interest recoveries and borrowing authority.

To the extent that budgetary considerations preclude the use of general revenues, then API believes an alternative broadbased tax should be used.

We applaud the initiatives taken by Senators Bentsen, Wallop, Chafee and Mitchell in recognizing the appropriateness of a broadbased tax approach and introducing legislation to accomplish it.

The API believes that the Bentsen-Wallop bill, S. 957, is the broadbased proposal that most closely satisfies several important criteria. The Bentsen-Wallop bill provides for a tax to be imposed upon all tangible personal property sold, leased, or imported by a manufacturer at a specified percentage of the sale or lease price.

The imposition of a tax on manufactured goods bears a fair relationship to the environmental problems Superfund is intended to address from the standpoint of the sources of the waste and any benefits of less costly past disposal practices.

The API would urge that the Superfund excise tax be a separately stated transaction tax. We believe that a separately stated tax would allow a credit to offset any Superfund excise tax paid with respect to manufacturers' purchases, would more closely reach the goal of competitive of neutrality, rather than a system which allows a credit for only that part of the Superfund excise tax paid with respect to materials directly contained in the property sold. By using a full credit method, there would be less tax on tax, and it would tend to have the same impact on the unit costs of each manufacturer.

This system would also facilitate the proper taxation of imports and rebate of tax on exports. It is perhaps the most important feature.

Foreign goods imported into the United States would enjoy no competitive advantage, and American-made goods would suffer no competitive disadvantage in world markets.

While the unfamiliarity of any new tax can raise some administrative concerns, we believe the Superfund excise tax is the least difficult to handle. Excise tax concepts are ones that should be familiar to both Government and private tax administrators who have worked with existing excise tax in the past.

Beyond the simple question of equity, tripling the size of Superfund but keeping Superfund's tax base unchanged would impose an added burden on a part of the industry already in distress. In recent years more than 100 refineries have been closed, 11,000 jobs cut, and the remaining refineries are operating at 25 percent below their capacity.

Finally, as to the scope, I will take just 10 seconds. S. 51, as reported, contains a victims assistance demonstration program. As we have detailed in our written statement, the existing evidence does not support an assumption that many people are being subjected to hazards from these sites. The health care of the Nation is important, but it would be wrong to create a massive back-door national health care or insurance program under the regime of Superfund.

Thank you.

[Mr. DiBona's written testimony follows:]

STATEMENT OF THE
AMERICAN PETROLEUM INSTITUTE

BEFORE THE
COMMITTEE ON FINANCE
UNITED STATES SENATE

ON THE REAUTHORIZATION OF THE
COMPREHENSIVE ENVIRONMENTAL RESPONSE,
COMPENSATION AND LIABILITY ACT OF 1980 (CERCLA)
AND THE HAZARDOUS SUBSTANCE RESPONSE REVENUE ACT
OF 1980 (SUPERFUND)

WASHINGTON, D.C.
APRIL 25, 1985

The American Petroleum Institute (API) respectfully submits these comments on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Hazardous Substance Response Revenue Act of 1980 (Superfund). The API is a trade association serving approximately 6,000 individual and 235 corporate members in all facets of the petroleum industry. We appreciate this opportunity to present our views on Superfund reauthorization.

API supports reauthorization. We believe that cleanup of the nation's abandoned hazardous waste sites is an important national priority that must be addressed promptly and efficiently. We believe reauthorization should remain firmly guided by that goal.

Our comments focus on three basic points that any reauthorization proposal must address: (1) the size of Superfund; (2) the sources of funding for Superfund; and (3) the appropriate scope of Superfund. In addition, our comments will cover other key concerns.

First, Superfund was enacted principally to ensure a ready source of federal funding to abate hazards from abandoned waste sites and to clean up those sites or portions of sites where responsible parties could not be determined or assessed for the cleanup costs. The size of the fund should be increased to a level commensurate with making progress in cleaning up sites and the Environmental Protection Agency's (EPA) capacity to use the fund's revenues efficiently.

API supports a fund size of approximately $1 billion a year for five years -- the range EPA said it could efficiently spend. This is more than a threefold increase over the existing level. Funding at this level would allow the agency to move forward to deal effectively with the most critical abandoned hazardous waste sites needing cleanup.

Second, to provide revenues for the response fund, we believe the sources of funding for CERCLA should be broadened, reflecting the fact that (1) EPA has found wastes from all types of businesses in hazardous waste sites, (2) the petroleum and chemical industries' share of Superfund taxes is far greater than their share of the wastes, (3) the existence of abandoned hazardous wastes is a broad public problem and cleanup provides broad public benefits, and (4) the oil and chemical industries would be seriously damaged financially if asked to be the sole support of a Superfund increased in size.

Third, we believe expanding the coverage of Superfund to matters tangential to the cleanup of abandoned hazardous waste sites will merely lengthen the time needed to accomplish the cleanup task. CERCLA's focus should not be diffused by establishing a public compensation scheme. CERCLA was never intended to replace other environmental statutes such as the

Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act, the Clean Water Act, the Clean Air Act or the Federal Insecticide, Fungicide, and Rodenticide Act.

THE SIZE OF THE FUND

API believes that the size of the Superfund should be increased to a level that would average about $1 billion a year for five years. The Administration's proposal would reauthorize Superfund at a level of $5.3 billion. EPA Administrator Lee M. Thomas said that this level of funding would: triple the resources available for cleaning up hazardous waste sites; give EPA the tools needed to continue implementing Superfund at the accelerated pace of the past two years; and allow EPA to get the cleanup job done as quickly and completely as possible.

A fund of $5 billion over five years represents a year-by-year compounded increase in spending of 20 percent, based on EPA's estimated spending level for fiscal year 1986. The $7.5 billion recommended in the bill reported by the Environment and Public Works Committee, S.51, would represent a year-by-year compounded increase of 30 percent. A compounded increase in funding of 20 percent a year over the next five years would permit EPA to make significant progress. Experience shows that it is difficult to manage a faster rate of expansion than this for industrial activities without gross inefficiency. This rate was, in fact, what the petroleum industry averaged in the 1970s.

Furthermore, $5 billion earmarked for Superfund would be only part of the five-year hazardous waste cleanup effort. Private party cleanups for the next five fiscal years are expected to be on the order of $2 billion and state and local government activities are expected to exceed $1 billion. In addition, another $1 billion or more may be spent by the Department of Defense to clean up wastes with which it is associated, bringing the total cleanup effort over the next five years to between $9 billion and $10 billion.

BROADENING CERCLA'S FUNDING

Currently, petroleum and chemical feedstock taxes provide 87.5 percent of Superfund funding, with the rest coming from general revenues.

As Superfund increases in size, the base of funding should be broadened because the sources of hazardous waste represent a broad cross section of U.S. industrial and agribusiness concerns, as well as government agencies, and because cleanup of abandoned waste sites is a general public problem. API suggests that $1 billion a year could be raised from (1) the current feedstock taxes (more than 95 percent of which is paid by the petroleum and chemical industries) -- about $300 million a year; (2) a new waste-end tax -- about $300 million a year; (3) general revenues -- about $200 million a year; and (4) recoveries, interest and borrowing authority -- about $200 million a year.

As discussed in greater detail later, the petroleum industry would support a properly written waste-end tax -- applied to dry weight and limited to $300 million a year. While the oil and chemical industries would pay a major part of such a waste-end tax, other companies also would pay a share.

Any amount of taxes above the $600 million in feedstock and waste-end taxes should come from general revenues. General revenues provide the broadest and fairest source of funding because all taxpayers benefit from the cleanup. When general revenues are relied upon, economic decisions are not distorted as they would be when taxes are targeted to specific industries.

If budgetary considerations preclude the use of general revenues for all or a portion of any necessary funding above $600 million, a broad-based excise tax on manufacturing sales would be the next most equitable solution.

Impact on the Refining Industry

The petroleum refining industry cannot pay more without serious negative impact on its ability to compete. Based on recent domestic refinery runs, each one cent per barrel increase in the CERCLA tax on crude oil would raise domestic refiners' costs by about $45 million per year. Thus a seven cent per barrel increase, such as the tax that Congress considered in 1984, would increase domestic refiners' annual costs by more than $300 million. An additional tax burden could well cause cutbacks in domestic refining in addition to those already experienced by that industry.

There is substantial idle capacity in the already shrunken domestic refining industry, despite the U.S. economic recovery. Since 1981, more than one hundred domestic refineries have ceased operating. That represents a reduction of almost one-third of all U.S. refineries. Even with that reduction, the remaining refineries continue to operate at 25 percent below capacity. Although nationwide refinery profit margins are not available, Gulf Coast refinery estimates, accounting for about 40 percent of U.S. refining, show negative average operating margins since the fourth quarter of 1983. In addition, several large companies, for which data are available, had refining/marketing profits of less than one cent per gallon, which suggests that their operations were at best only marginally profitable. Other large companies reported refining/marketing losses.

In sum, the domestic refining industry has fared poorly during the past few years. The industry is suffering from lower demand for refined products, heightened competition from product imports, the high costs of upgrading refining facilities and substantial additional environmental control costs. The recently announced rule to further phase down the lead content in gasoline is an example of the continued high environmental control costs. Singling out the U.S. refining industry for increased CERCLA taxes, when they already are paying more than their fair share, would make even worse an economic environment that has already seen a loss of 11,000 jobs.

Why the Funding Base Should Be Broadened

There are compelling arguments for broadening the base of funding for Superfund.

First, Superfund benefits the entire population of the nation. The Superfund cleanup effort helps provide a cleaner environment for everyone as well as for the diverse group of residents and property owners who more directly benefit from cleanup.

Second, although the petroleum and chemical industries pay almost all of the current feedstock tax, hazardous wastes are generated by many industries throughout the economy. Even with respect to oil and chemical wastes found at waste sites a high percentage were deposited there as a result of manufacturing processes carried out by companies not in the oil or chemical industries. For example, petroleum solvents are used as degreasers in the electronics industry and prior to the application of paint on metal surfaces by auto and appliance manufacturers.

At the Stringfellow site in California, EPA has identified 291 potentially responsible parties who may have contributed waste. Only a small percentage of those identified are petroleum or chemical companies. At Stringfellow, the potentially responsible parties include a broad cross section of U.S. industrial and agribusiness concerns -- large and small. These companies make products consumed throughout the United States by all of society. Food, apparel, paper, fabricated metals, electronic and transportation equipment were some of the product manufacturers identified. In the non-manufacturing sector, such concerns as agribusiness, motor freight, air transportation, communications and business services were identified. Other contributors of waste at the Stringfellow site were the City of Los Angeles, the U.S. Air Force and the U.S. Navy.

A look at substances found at hazardous waste disposal sites reveals similar inequities. According to EPA, of the 30 most frequently found substances at 881 hazardous waste disposal sites, only 11 are subject to the tax. Of the seven substances found most frequently at these sites, only two are subject to the tax.

A report to EPA has estimated that petroleum refiners generate less than 5 percent of the nation's hazardous wastes.

Yet crude oil accounts for about 15 percent of Superfund's tax revenues. Proposals to increase that percentage clearly are inequitable.

Third, it also is important to note that current producers or users of hazardous materials are not necessarily those who were responsible for problems at abandoned CERCLA sites. Often, the responsible firms are no longer in business. Taxing current production to pay for past actions is neither economically efficient nor equitable.

In conclusion, it is neither logical nor fair to ask these two industries to shoulder a vastly increased burden for cleanup of abandoned waste sites for which others are responsible.

Waste-End Taxes

Several waste-end tax proposals are now before Congress, including the Administration's proposal for a new tax on waste generation.

The Administration's proposed tax is designed to raise $600 million a year but could impose a far heavier burden, depending on RCRA hazardous waste decisions yet to be made. API supports a properly written tax on hazardous waste disposal -- rather than on generation -- of about $300 million a year.

An important criterion for any tax is certainty of effect: taxpayers -- to plan properly -- need to know on what the tax will be based and approximately how much tax they will owe; the government needs a reliable and predictable source of revenues under the tax. But under the Administration's proposed waste-generation tax the petroleum industry's tax burden would be uncertain because RCRA hazardous waste decisions yet to be made could greatly affect the amount of tax owed.

For example, under an interpretation of the "mixture rule", one EPA region has indicated that water from a separator (an oil-water separating device) could be hazardous. Under the interpretation, water in the separator could have come in contact with sludge (a hazardous waste), mixing minute particles of the sludge in the water. Thus, all outflow from the separator, almost entirely water, would be considered a hazardous waste. Taxing such outflow as if it were a hazardous waste defies reason. In the interest of equity and fairness, it is recommended that the Congress explicitly specify the wastes that are to be taxed upon enactment of a waste-end tax, and specifically provide that the list of taxable wastes and the rate of tax can be altered only by a subsequent act of Congress.

Also, using a dry weight basis for a waste-end tax, instead of a total or "wet weight" basis as in the Administration's bill, would help prevent future regulatory decisions by EPA from causing unfair tax burdens. Dry weight is the weight of the waste after removing the weight of water. Using a dry weight basis would insure that the tax is imposed on the actual content of hazardous material and thus avoid distorting waste management practices.

Both taxpayers and the Internal Revenue Service already have experience with using taxes based on dry weight under the existing Post-Closure Liability Tax, now a part of CERCLA. Taxpayers are determining dry weight through routine analytical procedures, and the Internal Revenue Service is now collecting revenues on a dry weight basis under this tax.

Additional requirements for an acceptable waste-end tax are:

First, favorable consideration of land treatment of biodegradable oily waste to take into account the environmentally sound destruction of oily material that occurs at such land treatment facilities.

Second, explicit exemption of secondary and tertiary wastewater treatment facilities from taxation.

Finally, special consideration should be given to wastes removed from all CERCLA sites so as not to frustrate efforts to quickly reach settlement agreements.

Contingent Broad-Based Funding Source

For all of the reasons stated previously, API believes that not more than $600 million annually should be raised from feedstock taxes and a new waste-end tax. Any additional funds should come from general revenues.

Should Congress, however, decide that budgetary considerations preclude the use of general revenues, then API believes an alternative broad-based tax should be used. We applaud the initiative taken by Senators Bentsen, Wallop, Bradley, Chafee and Mitchell in recognizing the appropriateness of this approach and introducing legislation to accomplish it. Although we have some recommended modifications, API views the Bentsen-Wallop bill (S.957) as the most appropriate broad-based tax.

API has identified five criteria which we believe should be applied to an appropriate alternative. Such a tax should:

1) Be broad-based.

2) Bear some relationship to Superfund.

3) Be competitively neutral.

4) Maintain import-export neutrality.

5) Be relatively easy and inexpensive to administer.

BEST COPY AVAILABLE

Several taxing schemes have been offered that meet some of these criteria. One that meets all of these criteria, and which we believe would be the most efficient, is a tax on manufacturing sales, or a manufacturers environmental excise tax.

The manufacturers environmental excise tax would be imposed upon all tangible personal property sold, leased, or used by a manufacturer at a specified percentage of the sale or lease price. Such a broad-based tax is an appropriate source of tax revenues for Superfund because no single industry, or small group of industries, would bear an undue burden. Because the tax base would be very large, a tax rate on sales as small as one-hundredth of 1 percent -- 0.01 percent -- would raise approximately $140 million a year.

Furthermore, imposition of a tax on manufactured goods bears a fair relationship to the environmental problem Superfund is intended to address. Benefits from and responsibility for hazardous substance generation and disposal have been widespread throughout society. Many common consumer goods involve the manufacture or use of hazardous substances, and the past prices of these goods have reflected the less costly waste disposal practices that no longer are acceptable.

The Bentsen-Wallop bill comes closest to the tax system we would recommend. It is a broad-based excise tax that is relatively import-export neutral and has a close relationship with the environmental concerns that Superfund addresses. However, API would urge that the Superfund excise tax be a separately stated transaction tax. We believe that a separately stated tax that allows a credit to offset any Superfund excise tax paid with respect to manufacturers' purchases would more closely reach the goal of competitive neutrality.

A manufacturers environmental excise tax -- based on sales transactions -- could be readily calculated and administered. At tax reporting time, the manufacturer would pay the net of the excise tax collected on sales less the excise tax paid on purchases from other manufacturers. Thus, the amount of tax owed to the government at any stage in the manufacturing chain would take into account the amount of tax already paid by other manufacturers earlier in the production chain. Manufacturers could adapt existing sales and purchase billing systems to identify and compute the net amount of tax due the government.

The Internal Revenue Service already audits existing excise taxes and should be able to adapt to a new excise tax for Superfund. Under existing manufacturers excise taxes, IRS auditors usually check accounting and billing systems, total volume of sales, and related general items. If this procedure reveals no discrepancy, further detailed examination of records is unnecessary.

Such a tax would be competitively neutral -- that is, it would tend to have the same impact on unit costs of each manufacturer. It could be imposed upon importation of goods into the United States, and rebated on exports. Thus, foreign goods imported into the United States would have no competitive advantage, and American-made goods would suffer no competitive disadvantage in world markets. Because it is a transaction tax, it can be readily identified and separately stated and, also, is likely to be considered legal under the provisions of GATT.

To reiterate, API believes that general revenues at the levels described above are the best way for the nation to pay for cleanup of abandoned hazardous waste sites. If budget considerations make use of general revenues impractical, then a manufacturers environmental excise tax, of the type just discussed, would be a reasonable substitute.

Retain a Capping Feature

The current Superfund law contains a "capping" feature which provides that authority to collect the tax would terminate when cumulative receipts from the petroleum and chemical taxes reach a specified portion of the overall authorization. The capping feature also provides that if the unobligated balance in the Fund exceeds a specified amount on September 30 of any calendar year, then no taxes are to be imposed during the next calendar year. That feature should be retained.

The capping provision avoids the economically inefficient buildup of large unobligated balances in the fund at any time during the authorization period. Furthermore, it provides an orderly transition in the event that total revenues actually collected from the funding sources exceed the authorized total expenditures for the program.

Retain the Post-Closure Liability Trust Fund

API believes that the Post-Closure Liability Trust Fund should be retained. Repeal as proposed by the Administration would discourage cleanup by opening up unlimited liability for an indefinite future period to any party entering into a cleanup agreement. A private party -- no matter how small its involvement -- could not afford to accept that risk and would have little choice but to avoid entering into any cleanup agreement. Thus, voluntary cleanup efforts would be greatly reduced and would be replaced by acrimonious legal proceedings.

The Post-Closure Liability Trust Fund will assure a reliable source of funds for EPA to handle any cleanup problems that may occur after closure of current RCRA disposal sites.

Repeal of the Post-Closure Liability Trust Fund would create cleanup problems in the future. It is not enough to simply clean up the problems of yesterday. We must anticipate the potential problems of the future and provide necessary funds to deal with them. Repeal of the Fund fails to accomplish this.

SCOPE OF CERCLA

API believes that the purpose and scope of Superfund should remain firmly guided by the need to clean up abandoned hazardous waste sites, or those portions of hazardous waste sites for which there is no responsible party. The Administration has said that its proposal would concentrate EPA resources on hazardous waste sites. These are the sites Congress originally intended to be the focus of Superfund.

API views the categorical limitations on scope contained in Section 101 and Section 113 of the Administration's Superfund bill as a positive step toward returning the Act's response authority to its original intent: the cleanup of abandoned hazardous waste sites for which there is no responsible party. Other environmental concerns, resulting from pesticides or mining, have been and are best addressed by other environmental laws. Amendment of those laws is the proper course for correcting any deficiencies that remain in meeting those other concerns.

Public Compensation

The objective of hazardous waste cleanup would be harmed -- not helped -- by proposals such as victims compensation that would redirect Superfund expenditures toward goals other than hazardous waste cleanup.

Establishing a program such as victims compensation within the Superfund would undermine the fund's basic rationale of dedicating revenue to a specific need -- the cleanup of abandoned hazardous wastes.

The victim assistance demonstration program in Section 129 of S.51, as reported by the Environment and Public Works Committee, would establish a bad precedent and should not be funded.

Under Section 129, a five year test program would be created in which five to ten communities deemed to be at "increased risk" of some disease or injury from the release of a hazardous substance would have their medical screening and treatment insured by Superfund -- when responsible parties have not undertaken to pay. During the initial demonstration phase, $30 million per year in Superfund monies would be set aside for this purpose.

Congress should consider the implications of this demonstration program if the program were to be extended in future years beyond what is contained in S.51. Proposals for those types of public compensation schemes rest on the assumptions that widespread health risks result from exposure to hazardous substances; that there is a general failure of individuals and society to provide compensation for the costs of chronic illness; and that the potential for explosive growth in the program's cost can be kept under control. The evidence now available does not support any of these assumptions. Furthermore, the seeds for explosive growth in program costs are already apparent in Section 129 of S.51.

No Widespread Health Risks From Exposure to Hazardous Substances

Available evidence does not support an assumption that many people are being subjected to significant risks from hazardous wastes. To the contrary, average life expectancy has been improving steadily and the overwhelming weight of scientific evidence suggests that the primary causes of cancer, the most prevalent chronic illness, are related to factors other than environmental exposure to hazardous substances.

According to a report, "Health, United States, 1984" released on March 22, 1985 by the U.S. Department of Health and Human Services, the overall life expectancy in the United States increased by four years between 1970 and 1983, a greater increase than in the previous two decades.

Testimony prepared for Congress in 1984 by Dr. Philip Cole of Epidemiology Resources Incorporated debunked the popular perception that the health of Americans is deteriorating and that cancer, for example, is on the rise. Dr. Cole noted that life expectancy has increased steadily in the United States during the 20th century, primarily because of a reduction in chronic disease mortality rates among adults. Dr. Cole added that cancer rates, other than those due to smoking, are stable or slightly declining. He expressed the view that diet, smoking and other aspects of "lifestyle" are the most important known causes of cancer -- far more important causes than occupational and environmental exposure to hazardous substances.

The role of diet in causing cancer was recently explored by Dr. Bruce Ames, chairman of the Department of Biochemistry, University of California in Berkeley, in an article in Science magazine. Dr. Ames discussed the increasingly persuasive evidence that carcinogens naturally present in certain foods may play a significant role in causing cancer. He pointed out that "human dietary intake of nature's pesticides is likely to be several grams per day -- probably at least 10,000 times higher than the dietary intake of man-made pesticides." He concluded that "diet, which provides both carcinogens and anti-carcinogens, is extremely likely to be another major risk factor" (in addition to tobacco).

A number of other scientific and medical reports in recent years have implicated fatty diet as a major culprit in heart disease and cancer. Additional reports have linked alcohol consumption to certain types of cancer. As a result, the U.S. Health and Human Services Department has recently established an information program to persuade Americans to eat fewer fats and oils and more fiber, to limit their alcohol intake and to give up tobacco, with the goal of cutting cancer deaths by 25 percent by the year 2000. That is a modest goal -- the best scientific estimates suggest that nearly 70 percent of all cancers can be attributed to tobacco, diet and alcohol.

In 1981, Sir Richard Doll, an internationally recognized physician and epidemiologist, and his associate, Richard Peto, found that the best estimate is that occupational exposure accounts for about 4 percent of all cancer-related deaths and environmental pollution less than 2 percent. Similar estimates were published in 1981 by the Congressional Office of Technology Assessment.

Widespread Compensation For Chronic Illness Costs Now Exists

There does not appear to be any overwhelming failure of individuals and society to provide compensation for the costs of chronic illness. Through a wide variety of public and private means, about 85 percent of the U.S. population is insured for both loss of income and medical expense due to chronic disease -- regardless of the source of the illness.

These programs include private health insurance, Medicare, Medicaid, Social Security Disability Insurance, the federal Supplemental Security Income Program, workers compensation programs, private disability and life insurance, and specialized programs such as the black lung and harbor workers' and longshoremen's programs, veterans benefits, federal employees compensation and others.

Even if a very small percentage of the population does not have some form of primary medical coverage, there is no justification for creating a national health program under Superfund. With the government providing "free" coverage under Superfund, there would be little if any incentive to continue private coverage. Existing insurers could declare their coverage to be secondary to Superfund insurance. Thus, the demonstration program would likely become the primary coverage for designated areas.

Potential For Runaway Program Costs

National experience with health or injury compensation funds shows that costs often grow out of control. For example, the Black Lung program -- originally intended to compensate underground coal miners afflicted with certain employment-related lung diseases -- was amended in ways that gradually eroded any requirement for meaningful evidence of the disease or that the illness was caused by coal mine employment. As a result, the

Congress took cognizance of this problem when it mandated research on the relationship between toxic substances and disease. Until more information is available from those Congressionally mandated studies required under CERCLA, the medical care and screening in public health emergencies provided for in the existing law is adequate. Medical assistance is now available under Section 104(i)(4) and (5) of the existing CERCLA.

Section 129 would necessarily resort to arbitrary rules. For example, the demonstration program would pay benefits on a geographic "cluster" basis but what street would mark the cutoff? What about former residents? How long a residency would be required for individual eligibility?

The health care of the nation is important. But it would be wrong to create a massive back door national health care or insurance program under the regime of Superfund. Consideration of national health care and national, disability and life insurance issues should be debated as such — not under this legislation.

Senator **Packwood**. Dr. Nordhaus.

STATEMENT OF WILLIAM NORDHAUS, PH.D., PROFESSOR OF ECONOMICS, YALE UNIVERSITY, NEW HAVEN, CONNECTICUT

Dr. **Nordhaus**. Thank you very much, Mr. Chairman.

My name is William Nordhaus. My professional background for identification purposes, is that I am a professor of economics at Yale University.

I appeared before this committee last fall to testify on the subject of financing alternatives for Superfund. At that time I reported on a study, assessing alternative revenue sources for Superfund. I would like today to reiterate the highlights of that report and to comment on some more recent proposals.

To summarize the conclusions of our report: First, it is clear that the cleanup of waste disposal sites will require significant additional funding over the next decade. Because required funds are many times larger than had been provided for in the 1980 Act, Congress must design a revenue source with great care. Moreover, the 1980 CERCLA feedstock taxes are a poorly designed mechanism for financing hazardous waste cleanup; indeed, they are hazardous to the health of the petrochemical industry. They suffer from one of the major defects of public finance in that they are intermediate product taxes in an industry that is heavily exposed to international trade.

Our analysis further finds that raising the chemical feedstock taxes would lead to a marked deterioration in the competitiveness of the domestic petrochemical industry, with a dramatic rise in imports and a sharp loss of exports.

Because of the poor design of the feedstock taxes, along with their potential for worsening the international competitiveness of the industry, I would recommend that these taxes be repealed and be replaced with less distortionary taxes.

The second part of our report dealt with alternative taxes, and basically there were two: The broad-based tax concept and the waste-end tax concept. And I will just say a word on each of those.

I recommended to this committee last fall that Congress rely chiefly on a broad-based tax. The one that I mentioned at that time was a tax on domestic corporate receipts, and that the bulk of Superfund financing come from this source.

Since that time, the committee, as has been mentioned many times this morning, received three other major tax proposals: Senator Bradley's approach, which is close to the one I recommended as a net receipts tax; the Bentsen-Wallop proposal of a manufacturing excise tax; and the Mitchell-Chafee corporate earnings tax.

I should say that we considered each of these taxes 2 years ago and favored the approach that we recommended by a slim margin over the others, but I think the margin is relatively slim.

Just a word on what the tax would be. It would be a tax on domestic corporate net receipts. That is to say these are a corporation's domestic gross receipts minus the cost of goods sold.

If this tax is levied on companies whose net receipts exceed something like $5 million, and if we are aiming for revenues in the order of say $700 to $800 million a year, this would be only a very low-tax rate, in the order of seven-tenths to eight-tenths of net receipts at current income levels. There would be on the order of 30,000 to 45,000 taxpayers in such a proposal.

I mentioned there are some other proposals. You could ask me about those if you like, but I think in many ways they are quite close to the one we suggested.

It is our view that a net receipts tax or a broad-based tax is preferable because it is simple to administer and pay, poses few distortions, and does not exclude industries which have clearly benefited from past hazardous waste practices.

Any reasonably structured broad-based tax would, in my view, be preferable to the expansion of current CERCLA feedstock taxes.

Our final suggestion was a waste-end tax, specifically a hazardous waste disposal tax, as a complement of the other taxes. This is in fact quite close to many of the taxes that you are considering. It differs somewhat in the design of the taxes, and also one major difference is that it has a differential tax according to the hazard of the substance being taxed.

That concludes the summary of my prepared testimony, Mr. Chairman.

Senator PACKWOOD. Doctor, thank you very much.

Ms. Beatty?

[Dr. Nordhaus's written testimony follows:]

DR. WILLIAM D. NORDHAUS

TESTIMONY BEFORE THE
SENATE FINANCE COMMITTEE

April 25, 1985

My name is William D. Nordhaus. My professional background, for identification purposes, is as follows: I am a professor of economics at Yale University, where I hold the John Musser Chair in Economics. From 1977 to 1979 I was a member of the President's Council of Economic Advisers. In that capacity I supervised the Council's activities in energy, environmental affairs, and regulation. I am the author of numerous books and articles on economics, energy, regulation, and finance.

I appeared last fall before this Committee to testify on the subject of financing alternatives for Superfund (CERCLA). My earlier testimony was based on a thorough study that I completed last year on the impacts of Superfund feedstock taxes and on the advantages and disadvantages of various financing alternatives.[1] I appear today to review my earlier study as well as to reassess earlier views in light of recent data and of more recent proposals for Superfund financing. The original study was performed in collaboration with the staff of Management Analysis Center, and was supported by the Atlantic Richfield Company. All conclusions are mine alone.

BACKGROUND ON FINANCING SUPERFUND

It would appear that, since the CERCLA legislation was passed in 1980, an even broader national consensus has emerged about the desirability of cleaning up hazardous waste dumpsites. As a nation, we have also discovered since 1980 that the magnitude and cost of alleviating this problem are much greater than had previously been thought. The Environmental Protection Agency's (EPA) recent Report to Congress estimates that 1,500 to 2,500 sites will require eventual Superfund cleanup at a cost of between eight and twenty-three billion dollars.[1] The Federal Appeals court ruling that allows EPA to add mining and fly ash disposal sites to the National Priority List (NPL) could increase the financing burden further. A recent estimate by the Office of Technology Assessment (OTA) puts the number of sites at 10,000 and the financing burden at $50 to $100 billion.[2] Which of the many conflicting estimates of cost will ultimately be proved correct is uncertain, although, historically, few problems of this nature have simply disappeared. It is certain, however, that the amount of money necessary to clean up Superfund sites will be very large and that this activity will continue over an extended period of time (about 15 years using EPA estimates, perhaps 50 years using OTA estimates). The increased revenue requirement emphasizes the importance of exercising care in choosing the best means to finance Superfund cleanups.

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[1] Dr. William D. Nordhaus and Management Analysis Center, Inc., *Financing Superfund: An Analysis of CERCLA Taxes and Alternative Revenue Approaches*, June 1984.

In an attempt to answer the question of how best to finance Superfund, our previous study examined all the major revenue alternatives and analyzed eight tax proposals in some detail. These taxes included:

- Three broad-based taxes:
  - Corporation income tax surcharge
  - Corporate receipts tax
  - Personal income tax (general revenues)

- Two intermediate-product taxes:
  - Energy taxes, such as a tax on crude oil, natural gas, and coal
  - Feedstock taxes such as in CERCLA

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[1] U.S. EPA, Office of Solid Waste and Emergency Response, Extent of the Hazardous Release Problem and Future Funding Needs; CERCLA Section 301(a)(1)(C) Study, December 1984, p. 4-10.

[2] U.S. Congress, Office of Technology Assessment, Superfund Strategy: Summary, March 1985, p. 8.

- Three waste-end taxes:
    - Hazardous substance production tax
    - Hazardous waste generation tax
    - Hazardous waste disposal tax

We examined each of these eight alternatives in light of well-established public finance criteria and recommended those taxes that best satisfied these criteria. The public finance criteria we used in judging our tax alternatives were:

- Revenue adequacy
- Administrative simplicity
- Equity
- Economic efficiency

Let me briefly address the last two criteria, equity and economic efficiency, because they are somewhat more technical than the other criteria.

Equity, or fairness, is an elusive characteristic. In the case of hazardous wastes, Congress has determined that, when the parties legally responsible for wastes can be found, they shall be held liable for cleanup. When responsibility cannot be determined, it is usual to turn to other parties who benefited from past waste disposal practices. In fact, many groups have benefited: producers once enjoyed lower costs; disposers of hazardous waste faced lower standards and, hence, lower costs for disposal; consumers paid lower product prices; and individuals who live in the vicinity of hazardous waste sites benefit from cleanup activities. Clearly, the benefits from products whose manufacture produced hazardous wastes are widely dispersed. To properly apportion cleanup cost to all groups, everyone who has ever used a styrofoam cup, bought pantyhose, taken aspirin, or wrapped a sandwich in plastic wrap would have to be taxed.

Economic efficiency, as applied to these taxes, entails two goals: (a) providing incentives for the appropriate disposal of wastes, and (b) raising revenues in a way that minimizes economic distortions.

RECOMMENDATIONS AND COMPARISONS TO RECENT PROPOSALS

Feedstock Taxes

Our previous study examined in detail current and proposed CERCLA chemical feedstock taxes. We determined that these taxes are flawed as a source for Superfund financing for several reasons:

- They serve as subsidies on imports of petrochemical derivatives (i.e., downstream chemicals produced from the taxed feedstocks) and as a tax on U.S. exports of the feedstocks and their derivatives.
- They indirectly tax many nonhazardous products, such as aspirin or plastic cups, as well as hazardous substances, such as carbolic acid. Consequently, they provide no special incentives either to reduce the generation of hazardous materials or to dispose of them properly.
- As currently structured, according to the EPA Report to Congress, the CERCLA feedstock taxes do not even tax the producers of hazardous feedstocks equitably.[1]

In order to analyze how CERCLA feedstock taxes affect U.S. imports and exports of both taxed feedstock chemicals and their principal derivatives, we developed a petrochemical trade model of worldwide production and trade in selected chemicals. We estimate that, at current tax rates, CERCLA's feedstock taxes have little impact on U.S. imports and exports of petrochemicals. However, when we calculated the trade impacts for two sets of primary and derivative petrochemicals (propylene/polypropylene and benzene/styrene)--using tax rates that were approximately three, five, and ten times higher than the rates now in effect--the results showed significant trade impacts would quickly arise.

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[1] U.S. EPA, Office of Solid Waste and Emergency Response, The Feasibility and Desirability of Alternative Tax Systems for Superfund: CERCLA Section 301(a)(1)(G) Study, December 1984, p. 5-4 ff.

To be specific, we found that a five-fold increase in taxes on propylene and benzene from $4.87 per ton to $24 per ton would cause polypropylene and styrene exports to fall by 13% and 20%, respectively. Imports of each would rise by 900% and 600%, respectively. We believe, based on a review of costs and markets, that similar trade impacts would occur for other petrochemicals when faced with tax increases of this proportion. In the short term, changes in trade flows will cause losses of domestic production, jobs, and profits. In the longer term, as plant replacement and technological innovation make new petrochemical capacity economically attractive, higher CERCLA taxes could well tip the decision to build new capacity outside our borders.

As EPA's Report to Congress points out regarding the trade issue, worldwide trade in feedstocks and derivatives is getting increasingly competitive, and new low-cost producers are starting operations in places like Saudi Arabia, Mexico, and Canada.[1] Recently, the European Economic Community (EEC) felt impelled by these events to impose a 13.5% tariff on Saudi methanol imports.[2] While most Saudi production still appears destined for Europe and Japan, trade barriers like these can only help to direct additional flows of materials to the U.S. Ironically, then, the Europeans are encouraging domestic production of petrochemicals by tariff protection at just a time when Congress is considering discouraging American production of petrochemicals through an increase in CERCLA feedstock taxes.

Some might claim that CERCLA feedstock taxes are effective as an externality tax, by which I mean a tax that relates to the hazard posed by the chemical. If they operated properly in this regard, feedstock taxes would reduce generation of the hazardous materials, leave non-hazardous materials untaxed, and thereby internalize the costs that the hazardous materials impose on society. With a separate economic model we examined the incidence of CERCLA taxes in the production of petrochemical products. We analyzed the effects of a tax levied on the upstream feedstock, propylene, compared to a tax that is levied on a downstream hazardous product. The results show that feedstock taxes are too indiscriminate to be effective externality taxes. The burden of the tax on feedstocks falls on derivatives that may be nonhazardous, such as aspirin, as well as those that are hazardous, such as carbolic acid. Hence, feedstock taxes are not especially effective in reducing the generation of hazardous materials by raising their costs relative to nonhazardous materials.

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[1] U.S. EPA, Office of Solid Waste and Emergency Response, Impact of CERCLA Taxes on the U.S. Balance of Trade; CERCLA Section 301(a)(1)(F) Study, December 1984, Chapter 3.

[2] Wharton Economics, Wharton Economic New Perspectives, January 14, 1985 and The Economist, March 9, 1985.

The current CERCLA feedstock taxes do not tax chemical producers in an equitable manner. According to EPA's Report to Congress, of the 43 feedstocks that are currently taxed, only 33 have contributed to the wastes found at the NPL sites. On the other hand, wastes associated with 15 additional untaxed feedstocks have been found at NPL sites.[1] Moreover, the relative feedstock tax burden is not in proportion with wastes found at the dumpsites. Organic chemicals bear 68% of the tax burden, but on a frequency basis are responsible for only 38% of the problem at hazard ranked sites. Inorganic chemicals bear 18% of the tax burden but cause 59% of the problem (on a frequency basis at hazard ranked sites).[2]

Broad-based Taxes

I recommended to this committee last fall that Congress rely chiefly on a broad-based tax—a tax on domestic corporate net receipts—for the bulk of Superfund financing. Information that has come to my attention since that time has reinforced this view. If anything, the increasing sizes proposed for the Superfund make it even more important to base Superfund financing on an equitable and non-distorting tax. I recommend a broad-based tax for the major share of financing cleanup because broad-based taxes best meet the public finance criteria that I set out earlier. Most broad-based taxes would:

- provide the necessary revenue streams at very low tax rates
- be very predictable because they are based on overall economic activity

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[1] U.S. EPA, Office of Solid Waste and Emergency Response, The Feasibility and Desirability of Alternative Tax Systems for Superfund; CERCLA Section 301(a)(1)(G) Study, December 1984, p. 5-4.

[2] Ibid., p. 5-5.

- be simple to collect and pay if they are levied on quantities that are already reported to the IRS.
- be equitable, since past benefits derived from products that caused the waste problem (and benefits from current cleanups) are dispersed very widely throughout the nation.
- produce minimal economic distortions, because with a broad tax base tax rates can be very low.

Specifically, I recommend a tax on domestic corporate net receipts; these are a corporation's domestic gross receipts minus cost of goods sold. If this tax were levied only on companies whose net receipts exceeded some cutoff such as $5 million, the number of firms taxed would be small, somewhere between 32,000 and 46,000 out of a total of 3.5 million companies filing Form 1120. Yet, in 1980, these firms generated approximately 64% of all net receipts, slightly more than $1 trillion.[1]

While excluding smaller firms from paying the tax eases the administrative burden a great deal, it could mean that some firms associated with hazardous waste problems do not pay any broad-based tax. We feel that this tradeoff between equity and ease of administration is worthwhile. Another criticism of the net receipts approach is that the accounting base for cost of goods sold varies across companies and industries. While such variations undoubtedly exist, differences in the tax treatment of similarly situated companies in the same industry should be very minor.

Other bills and proposals utilizing broad-based taxes take somewhat similar, albeit in my estimation less desirable, approaches. Senator Bradley's bill (S. 596) is a tax on all net receipts of corporations with gross receipts in excess of $50 million. I recommend two minor modifications in this approach. First, taxing all net receipts, including those derived from foreign operations, would constitute a tax on hazardous wastes produced overseas by U.S. subsidiaries and seems inequitable. Secondly, since corporations will pay taxes on the entire amount of their net receipts, not just the excess over some cutoff, there will be a "notch" in tax payments. Notches should be avoided when possible and can be eliminated by having the $50 million (or $5 million in my proposal) be deductible from total receipts. Obviously, if notches are avoided and the tax base narrowed, tax rates would have to be set correspondingly higher to yield the same revenue.

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[1] Dr. William D. Nordhaus and Management Analysis Center, Inc., Financing Superfund: An Analysis of CERCLA Taxes and Alternative Revenue Approaches, June 1984, p. 99.

Another broad-based tax proposed by the Chemical Manufacturers Association and American Petroleum Institute that is attracting some attention is called the Manufacturers Environmental Excise Tax, or MEET for short. This tax is a broadly-based tax imposed on the sale or lease of "tangible personal property" by manufacturers or importers. To avoid the problems of a turnover tax, the MEET would credit taxpayers with the tax they had paid on purchased goods. The following questions arise with respect to this tax proposal:

- Will this tax be costly for taxpayers to compute and for the IRS to collect?
- Does the MEET exclude many nonmanufacturing firms, such as transportation companies and waste disposal firms, that have been associated with Superfund sites?
- Would this approach require a new set of categories in the tax code, namely ones defining the relevant "manufacturing" and taxable transactions activities?

At the same time, it must be noted that the MEET is a more elegant tax than is one based on corporate receipts. It avoids the "turnover" tax aspects of net receipts; moreover, it avoids the prospect of imposing a small tax on foreign trade. Unfortunately, this elegance is attained at the price of increasing the complexity and administrative cost of the tax. In the end, at the low tax rates envisaged by any of the broad-based tax proposals, the degree of inefficiency due to cascading of the tax will be negligible.

Another broad-based tax proposal recently introduced by Senator Bentsen might alleviate some of the burdens of administering the MEET proposal in that it would simplify to some degree the credit for taxes already paid on purchased materials.

To summarize on the issue of broad-based taxes, I feel that the net receipts tax is the best choice among all the broadly-based tax proposals because it is the simplest to administer and pay, poses few distortions, and does not exclude industries which have clearly benefited from past hazardous waste practices. At the same time, any reasonably structured broadly-based tax would be preferable to expansion of the CERCLA feedstock taxes.

Waste-End Taxes

Finally, our analysis suggests that a waste-end tax, specifically a hazardous waste disposal tax, would be a useful complement to the broad-based tax in helping to finance Superfund. This conclusion is based on the following considerations. A hazardous waste disposal tax could:

- provide incentives, if the tax rates were carefully structured, for companies (i) to reduce the amount of hazardous wastes they produce, and (ii) to encourage more desirable disposal and treatment methods

- internalize some of the associated social costs of hazardous wastes

- supplement the net receipts tax as a means of raising substantial revenue.

Using the public finance criteria set forth earlier, waste-end taxes would provide an adequate source of revenues. Approximately twenty states now use some form of waste-end tax. After an initial shakedown period, these taxes appear to be working adequately. Waste-end taxes would be administratively straightforward to assess with only slight changes in current reporting requirements. Waste-end taxes would also satisfy the conditions of equity and economic efficiency.

Many of the current proposals are similar to the waste-end tax we designed last year, though with a few significant differences. The waste-end tax I recommended would be levied on the disposal of hazardous wastes as defined in the RCRA regulations. The tax would be incurred at the time when hazardous waste is disposed of onsite, stored onsite for more than a year, or received at an offsite facility for either storage or disposal. The exact structure of the tax is discussed in some detail in our previous report.

Our proposal may represent an improvement over other plans in some respects. For example, in our proposal tax rates vary by the disposal method, as they do in other proposals, but we would in addition tax more hazardous materials at higher rates. Other proposals do not attempt to match the tax rate with the degree of potential harm. Their taxes are set at equal rates per ton even though different substances may pose very different degrees of hazard and potential social costs. Tax rates on PCBs and sludges should no more be the same than should the prices of diamonds and watermelons. This is an important flaw in many of the proposals.

In addition, other proposals either do not tax long-term storage of hazardous wastes or do not tax storage annually. We believe that annually taxing materials that are stored for long periods will encourage disposers to properly treat or dispose of their wastes in a much more timely (and safe) fashion than has been the case for many in the past.

CONCLUSIONS

I will now briefly summarize my conclusions, based on our 1984 report, as well as developments since that time.

1. It is clear that the cleanup of waste disposal sites will require significant funding over the next decade and perhaps beyond. Because the required funds are many times larger than had been

provided for in the 1980 CERCLA legislation, Congress must design a revenue source with great care.

2. The 1980 CERCLA feedstock taxes are poorly designed as a mechanism for financing hazardous waste cleanup. They are hazardous to the health of the petrochemical industry. They suffer from one of the major defects of public finance in that they are intermediate product taxes in an industry that is heavily exposed to international trade.

3. Our analysis finds that raising the chemical feedstock taxes would lead to a marked deterioration in the competitiveness of the domestic petrochemical industry, with a dramatic rise in imports and sharp losses of exports.

   Because of the poor design of the feedstock taxes, along with their potential for worsening the international competitiveness of the petrochemical industry, I recommend these taxes be repealed and be replaced with less distortionary taxes.

4. The best revenue alternative is an earmarked broad-based tax, such as the corporate net receipts tax analyzed above. In addition, a waste disposal tax would be a useful and environmentally sound source of revenues. Either of these two sources would induce very low levels of economic inefficiency; would distort international trade very little; and, in my view, would spread the burden of cleanup costs widely and fairly across the community.

STATEMENT OF CHRISTINE T. BEATTY, VICE PRESIDENT, WASHINGTON AFFAIRS, ST. JOE MINERALS CORP., WASHINGTON, DC

Ms. BEATTY. Thank you, Mr. Chairman, Senators.

St. Joe Minerals testified last year before this committee on Superfund, and at that time we urged the committee to consider a broad-based funding mechanism. Specifically, St. Joe recommended that all corporate taxpayers pay a small surcharge based on Federal corporate income taxes paid.

We continue to believe this option has merit, although we are delighted to see the introduction of three other broad-based proposals, and we think they are all commendable and they all offer constructive ideas and should be seriously considered.

Our objective in putting forward the corporate surcharge—and I think this is shared by others who have introduced broad-based bills—is to provide a very stable, predictable revenue base for Superfund, to recognize, as has been repeated many times here today, that waste disposal is a national activity and is a societal problem, to make the burden on any one company small so that it does not have the perverse effect of making companies who are struggling or losing money even worse off, and then, lastly, to achieve a simple inexpensive mechanism that would be easy to collect and to enforce.

One further item we would urge the committee to consider is to use a broad-based mechanism as the sole funding mechanism. It seems to make little sense to have three taxes to support a single-purpose fund, and we would hope when the committee examines the proposals more they would consider scrapping the feedstock tax and rejecting the waste-end tax.

I won't get into details here, but in my printed statement there are specific discussions of feedstock taxes and waste-end taxes and the problems that St. Joe, as part of the mining industry, has with those alternatives.

I would like to draw your attention to the power of this corporate surcharge and the amounts of money it could raise. Immediately behind page 14 of the testimony is a chart showing the rate that would apply at various funding levels. For instance, if it is used as the sole funding mechanism, and if the fund were set at $5 billion, a 1-percent surcharge would raise that amount of money by 1990. That amounts to $1 per $100 of tax liability. We think it is a very small and reasonable burden to pay.

Finally, Mr. Chairman and Senators, I would note that the Joint Committee on Taxation has just issued a report of all the broad-based alternatives. As for the corporate surtax, as they call it, they describe it as the simplest alternative that has surfaced to date. They mentioned one disadvantage, however, and that is that some corporations would not pay, by virtue of tax deductions.

It was not our intention in putting forward this proposal to get into the issue of tax reform. We are neutral on that issue, and we think as this committee works its will with the Tax Code that our proposal would simply ride the integrity of the Code from year to year as it changes.

So, in closing, I hope that our fourth alternative will be given consideration by the committee. Thank you very much.

[Ms. Beatty's written testimony follows:]

TESTIMONY OF CHRISTINE T. BEATTY
VICE PRESIDENT - WASHINGTON AFFAIRS
ST. JOE MINERALS CORPORATION
before the
SENATE FINANCE COMMITTEE
regarding
SUPERFUND FUNDING
April 25, 1985

* *

A FUNDING MECHANISM ALTERNATIVE:
SUPERFUND CORPORATE SURCHARGE

Mr. Chairman and Members of the Senate Finance Committee:

I am Christine T. Beatty, Vice President-Washington Affairs St. Joe Minerals Corporation. St. Joe is a diversified natural resources company and was acquired by Fluor Corporation in 1981. St. Joe is the largest U.S. integrated producer of lead and zinc and is a major coal and iron ore producer. In addition, St. Joe has lead, zinc and gold operations in Latin America.

St. Joe, as a responsible member of the mining industry, supports the goal of cleaning up abandoned hazardous waste sites to a level that is safe for the public health and supports the Superfund concept as a mechanism to achieve that end. We also recognize the need for a long-term Superfund program and believe that this Committee and the Congress should adopt a new broad-based taxing mechanism in order to finance the program. In this connection, we believe that both the current feedstock tax and the proposals to establish a national waste-end tax are fundamentally flawed, are punitive, will not produce the revenues needed to finance the program and will, if expanded, increased, or imposed (as the case may be), reduce the economic health of affected industries. Consequently we believe the current feedstock tax should be repealed, that the waste-end tax proposals should not be adopted, and that Congress should adopt a broad-based, industry-neutral tax in which liability is commensurate with the ability to pay. As one such approach, we are recommending a small surcharge on Federal corporate income taxes paid.

WHAT'S WRONG WITH THE FEEDSTOCK TAX

- The feedstock tax approach purports to establish a connection between those substances taxed and the substances causing problems at Superfund cleanup sites -- the "polluter pays" principle. While the "polluter pays" principle may be appropriate in connection with Federal, State and local regulatory programs to provide cleaner air and water, and to manage and treat hazardous wastes, such as last year's RCRA amendments, it has no relevance at Superfund sites consisting in whole or in part of wastes generated by businesses that no longer exist or cannot be identified. We believe that imposing a tax on existing manufacturers of chemicals and metals to pay the cleanup costs at sites where the responsible parties cannot be identified is a perverse application of the doctrine of strict liability -- that is, the manufacturer of a particular substance is made liable to pay a tax on that product for the disposal practices of others manufacturing the product in a previous era. This approach also ignores the fact that all existing manufacturers which are identified with particular waste sites will be liable to pay for the cleanup of those sites. Therefore, the burden of raising funds to clean up truly orphaned sites should be spread more broadly throughout the industrial community.

- The feedstock tax is punitive in that it attacks its own tax base by ignoring the taxpayers' economic situation and the products' market conditions.
- The feedstock tax is inequitable -- some substances get taxed, others do not, even though virtually all businesses have used, profited and benefited from the production of these substances.
- A feedstock tax cannot avoid creating economic distortions in the marketplace. It increases the cost of the taxed product and, thus, gives an advantage to those competing products which are not taxed. For example, under last year's House-passed bill, zinc -- an essential trace metal -- would have been taxed, while aluminum -- equally non-toxic -- would not have been taxed. The two metals compete for certain industrial uses such as die casting, and the House bill would have articially created an economic incentive to substitute aluminum for zinc.
- U.S. fabricated goods manufacturers incorporating Superfund-taxed substances in their products would be at a competitive disadvantage to identical imported fabricated goods which are not taxed. This result could be avoided by imposing a tax on imported fabricated goods containing a taxable substance, but this, according to the Treasury Department, would be an administratively impossible task and could create some conflicts with U.S. obligations under GATT. This is an example of the enormous complexities inherent in relying on feedstock taxes which are avoided under our

proposed alternative -- a surcharge on Federal corporate income taxes.

For the domestic mining industry, which has yet to recover from one of the deepest and longest recessions in its history, there is no guarantee that feedstock taxes can be passed on to our customers. When the market is weak, there will be intense pressure on U.S. producers to absorb the tax which will further exacerbate the problem of already declining profitability when the market is depressed. The inability of the minerals industry to pass along the feedstock tax to its customers will have the following additional effects:

- Decrease the economic viability of companies engaged in metals and mining and lessen the capital available for modernization and expansion.
- Shift the thrust of exploration activities and mineral development offshore, causing increased U.S. import dependence on metals and strategic materials, reduced domestic mineral industry employment and greater trade deficits.
- Cause certain marginal operations to become permanently unprofitable, forcing closures and loss of jobs.
- Inhibit domestic investment in new manufacturing operations which utilize taxable raw materials and favor foreign investments.

In sum, we think that the use of feedstock tax to finance the Superfund is fraught with inequities and threatens the economic viability of many basic domestic industries and particularly the domestic minerals industry.

THE WASTE-END TAX SHOULD BE REJECTED

We strongly urge that Congress not adopt a so-called waste-end tax for the following reasons:

- A waste-end tax ignores the economic condition of the taxpayer and the inherent differences in volume and toxicity of wastes as they may vary from industry to industry and facility to facility.
- It ignores the 98th Congress' passage of very stringent hazardous waste control legislation (RCRA) which is clearly intended to discourage the land disposal of hazardous waste by imposing substantial new costs upon the regulated industries in the form of more stringent performance and design standards -- a regulatory framework under which the polluter is already paying and under which the polluter will pay substantially more in order to continue operations and production.
- It is an attempt to use the tax system to accomplish the intent of RCRA and, when coupled with the added new RCRA costs, it becomes a second financial "whammy" on the RCRA-regulated industries, because they must now both finance the additional costs of regulatory compliance and at the same time pay a tax on those waste streams which they are trying to minimize.
- It increases the costs of domestic producers, giving a further competitive advantage to foreign producers and importers who would not be similarly taxed.

- Because hazardous waste generation will likely decline under RCRA, it fails to provide the long-term and stable revenue base needed for the Superfund. (States' experiences with waste-end taxes have not generated originally anticipated revenues in many cases, as well as proving difficult to administer and enforce.)
- EPA's waste-end tax proposal is especially onerous as EPA could levy additional taxes by simply redefining what constitutes a hazardous waste.
- Waste-end taxes provide an additional incentive for illicit disposal or concealment to avoid the tax -- similar to conclusions drawn in the February 22, 1985 GAO Report: "Illegal Disposal of Hazardous Waste: Difficult to Detect and Deter" -- which concluded that "additional regulatory measures may increase deterrence but may not detect the determined violator."

A combination of feedstock and waste-end taxes, plus an additional broad-based tax mechanism, would result in three separate national tax systems to raise revenue for a single Federal fund -- resulting in a substantial increase in Federal administrative costs (for example, more Treasury and EPA personnel for auditing, collection and other administrative support). Moreover, many businesses could end up paying a tax under each tax system.

LET'S RE-EXAMINE THE "POLLUTER PAY" PRINCIPLE

The feedstock and waste-end taxes are two variations of this concept. The feedstock tax is aimed at certain products that may be inherently hazardous or are the result of industrial processes that may result in some hazardous wastes. The waste-end tax is aimed at both creating an incentive to reduce hazardous waste generation and imposing a tax on those wastes that may later become a part of Superfund site. However, neither tax -- alone or in combination -- will ensure that all polluters pay.

We believe, therefore, that the "polluter pay" idea needs to be examined more broadly along the following lines:

- Polluters already pay and will continue to pay more in order to comply with environmental standards and requirements under such statutes as RCRA, the Clean Water Act, the Clean Air Act, among others. There is now in place a broad polluter pay regulatory framework under Federal, State, and local law -- and one that is getting more stringent each year.
- At Superfund sites, responsible parties are liable to pay for the cleanup costs occasioned by their wastes, irrespective of any wrongdoing -- again, the polluter is paying.
- When the 98th Congress debated the RCRA amendments, a major area of controversy centered upon the threshhold for imposing recordkeeping and reporting requirements on what are known as "small quantity generators." Congress debated whether the regulatory threshhold should be 25 kg/month or 100 kg/month and ultimately agreed to 100 kg/month, because over 250,000 more small quantity hazardous waste generators would be subject to such requirements if lowered to 25 kg/month.
- Municipal landfills are occupying positions on the NPL in increasing numbers -- each receiving wastes from thousands of businesses and individual waste generators.

- The commercial waste disposal facilities which have been listed for Superfund cleanup have received in some cases wastes from scores to hundreds of businesses -- large and small -- which paid them to dispose of the wastes. Under Superfund, those customer companies will pay again because of the improper or inadequate action of the facility.

We believe that these factors clearly and undeniably demonstrate that the generation and disposal of hazardous wastes is a national activity involving all sectors of the economy. As such, we believe the Superfund tax should be shared broadly and even-handedly among all businesses in a manner that respects the taxpayers' ability to pay thus avoiding the economic and market distortions in industry that could result from either an increase or expansion of the feedstock tax or the imposition of the waste-end tax.

PROPOSED FINANCING ALTERNATIVE -- TAX ON CORPORATE INCOME TAXES PAID

We believe it is time for Congress to abandon the feedstock tax, reject a waste-end tax as means of financing Superfund and adopt a broader based approach that would more equitably distribute Superfund costs throughout the industrial sector, eliminate the inherently punitive nature of feedstock and waste-end taxes, avoid economic distortions in the marketplace and bear a relationship to a company's ability to pay.

Specifically, we strongly recommend that this Committee consider an alternative approach to taxation, one in which business and industry as a whole would pay a small surcharge based on Federal corporate income taxes paid. Such an approach recognizes that businesses and industries of all kinds both (1) have benefited from industrial development which has created the problems that Superfund is intended to remedy and (2) have been involved, to some degree, in either the manufacture, sale, use or disposal of hazardous wastes.

As mentioned earlier, Superfund sites are in no way limited to smokestack industry plant sites. They also include public waste management facilities and the "high tech" industry wastes, such as those in "Silicon Valley". Virtually every business or industrial organization creates and disposes of wastes in some way -- either on site, in small quantities destined for handling by commercial or public refuse collection services or in large quantities destined for disposal in waste management facilities. Waste generation and disposal is, therefore, pervasive in American business. Our proposal recognizes this fact and provides a mechanism for the business community to share in an equitable manner in "footing the bill" to pay for the cleanup of wastes at sites which cannot be attributed to particular parties.

Under the surcharge approach, the Superfund tax could be shared by the over 2.8 million businesses which file corporate income tax returns and pay Federal corporate income taxes.

Such a broad-based approach:

- provides a more predictable tax base than the feedstock or waste-end tax approaches -- the same one upon which the Federal budget is based -- thus, guaranteeing adequate and reliable financing of the Fund;
- avoids economic distortions in individual industry markets and the creation of artificial incentives to substitute untaxed substances for taxed substances in manufactured goods;

- avoids the complexities involved in fairly taxing imported products that themselves are taxable chemicals or which contain taxable chemicals;
- avoids any potential GATT problems, and yet those foreign corporations having a U.S. income tax liability would pay, as well as those who derive income from foreign imported goods.
- ensures that struggling companies will not be made worse off in years when they are unable to pay -- that is, when they incur losses and do not have to pay Federal corporate income taxes;
- simplifies Treasury administration of the Superfund tax and avoids, or at least minimizes, the need for more resources in the Internal Revenue Service and Customs to collect the tax. The tax liability line on IRS Form 1120 — "U.S. Corporation Income Tax Return" -- provides the sole basis for determining and calculating Superfund surcharge liability.

CRITICISMS OF THE SURCHARGE

In the course of our discussions with others in industry and business, as well as Legislative and Executive branch staff, several concerns or objections to a surcharge on corporate income taxes have been raised:

- Criticism #1: Many industrial and business sectors are not polluters and, therefore, should not pay a Superfund tax. We believe, as stated earlier, that all businesses have benefited from lower cost products and materials as a result of the less costly waste management practices of the past, as well as through substantial investment or otner fiduciary relationships with industry. Moreover, virtually all companies use, sell or dispose of potentially hazardous products in some way and to varying degrees. The orphaned site cleanup problem cannot be equitably and accurately attributed to a small or narrow industrial grouping. It is a problem whose solution must be financed over a broader base. Consequently, business in America should join collectively in financing a Fund to pay for those orphaned site cleanup costs that cannot be attributed to particular parties.

- Criticism #2: Small business will be injured by yet another tax. We don't believe this is the case. Even the smallest business, if the Superfund surcharge rate is set at one percent, would pay only $1 per $100 of Federal corporate income tax liability. A small business paying $10,000 in taxes would pay a Superfund surcharge of only $100. Based on OMB projections of corporate income tax receipts, a 1% surcharge would raise over $5 billion in the 1986-90 period. Moreover, by definition, any business would pay only when it has the ability to pay, that is, when it is profitable and incurs a Federal income tax liability.
- Criticism #3: Profitable polluters who pay no corporate income taxes would not pay a Superfund tax. First, ensuring that profitable corporations pay a tax is on the agenda of this Committee and the Congress. The

proposed Superfund surcharge simply rides the integrity of the tax code and is neutral on the tax reform debate because such issues are more appropriately dealt with in the context of revisions to the general tax code. If tax reform results in more corporations paying income taxes, then Superfund revenue will either increase automatically or Congress will be in a position to reduce the Superfund surcharge to avoid "over funding" EPA's program. Second, it is not accurate to say that some of these corporations are polluters who do not pay. They may not pay the surcharge in a given year, but they already pay, and will pay increasingly more, in order to achieve and maintain compliance with federal environmental regulatory programs such as RCRA. Moreover, if such a company is in fact a responsible party at a Superfund site, the company will pay the costs of cleanup.

- Criticism #4: The existing feedstock tax is easy to administer because only a handful of companies pay. This criticism indicts itself because the Superfund sites have clearly been created by more than a few companies. Moreover, ease of administration in the context of taxing only a few companies is not a legitimate basis on which to perpetuate an inequitable and punitive tax that ignores economic impact, market distortions and ability to pay.
- Criticism #5: It is too late to change the method of tax. We believe that this is the time to switch to a

simplified, broad-based approach that is capable of providing a stable, long-term revenue base and which avoids the impacts of more costly and complex feedstock and waste-end taxes.

- Criticism #6: A waste-end tax creates an incentive to reduce waste generation. We believe a waste-end tax will encourage more illegal dumping or concealment and will be costly to administer. Moreover, the recent RCRA amendments, as well as the Clean Water Act, provide adequate and more appropriate vehicles by which to create incentives to reduce the current discharge of wastes into the environment. Finally, we do not believe that it is an appropriate use of the Government's taxing authority to attempt to tax a problem out of existence, nor do we believe such an approach can be successful.

CONCLUSION

A Superfund surcharge will equitably and effectively meet the financing needs of the Superfund -- without the complexity and economic repercussions associated with feedstock and waste-end tax approaches. While we believe the broadest possible base for the imposition of the proposed Superfund surcharge is most desirable, we have developed a number of alternative options which would exclude certain categories of corporate taxpayers. These are illustrated in the attached materials. The options presented illustrate the revenue generating capacity of even very low surcharge rates and show the rates which would apply under various funding levels. We do not mean, however, by these illustrations to endorse any particular funding level or the exclusion of certain taxpayers.

In conclusion, we urge this Committee to seriously consider this approach as one which can, in a very simple way, ensure a solvent Superfund financed in an equitable and broad-based manner.

March 18, 1985

SUPERFUND SURCHARGE PROPOSAL

PREMISE: Tax corporations at a rate that avoids economic dislocations and bears a relationship to a company's ability to pay.

PROPOSAL: Impose a surcharge on Federal corporate income taxes due (IRS Form 1120, line 31). Use surcharge as sole funding mechanism.

WHO PAYS: Only those corporations (see options below) actually paying Federal income taxes in a given tax year.

ESTIMATED CORPORATE TAX RECEIPTS ($$ in billions)

	1986-1990
Total Corporate Income Tax Receipts (OMB)	$541.8

Option 1: All corporate taxpayers

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	.92%	1.38%	1.85%

Option II: All corporations having gross receipts over $10 million (81% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.14%	1.71%	2.28%

Option III: All corporations having gross receipts over $50 million (66% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.40%	2.10%	2.80%

Option IV: Only "industrial" corporations (agriculture, mining, manufacturing, construction, and transportation and utilities); excluded are wholesale and retail trade, finance, insurance, real estate, and services (67% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.38%	2.07%	2.75%

Option V: Only those "industrial" corporations having gross receipts over $10 million (63% of total taxes paid).*

	1986-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.46%	2.20%	2.93%

Option VI: Only those "industrial" corporations having gross receipts over $50 million (53% of total taxes paid).*

	1966-1990		
Raise from industry ($$ in billions)	$5	$7.5	$10
Applicable surcharge	1.74%	2.61%	3.48%

*Estimates of percent taxes paid based on Treasury Department analysis of 1981 corporate income taxes (IRS Publication 16, Rev. 7-84).

SUPERFUND SURCHARGE PROPOSAL —
"SUPERFUND TAX EQUITY ACT"

All corporate taxpayers pay a surcharge on Federal income taxes due (IRS Form 1120, line 31).

Advantages

- Accepts integrity of federal tax code as defined and amended by Congress.
- Only corporations that are profitable and owe Federal taxes in a given year would pay.
- Stable revenue base, relying on U.S. Treasury tax receipts projections.

Criticisms/Rebuttals

- Imposes broad-based corporate responsibility to finance Superfund cleanup, irrespective of direct contribution to Superfund problem — a major criticism by those not taxed and not engaged in industrial processes.

  Rebuttal: (1) All businesses have benefited from the production of chemicals and metals and should contribute toward resolving the problem.
  (2) Current feedstock tax bears little or no relationship to a company's contribution to Superfund problems.

- Those profitable industrial corporations able to avoid taxes because of deductions and credits would not pay — a criticism of tax advocates.

  Rebuttal: (1) Tax "reform" will change this.
  (2) Proposal can be amended to apply surcharge before certain credits/deductions, thus broadening the tax base even further and allowing the surcharge rate to be reduced.

- Criticized as a tax that could be increased or expanded to subsidize other environmental programs.

  Rebuttal: This widespread concern makes Congressional action to include other environmental programs unlikely.

Form **1120**
Department of the Treasury
Internal Revenue Service

U.S. Corporation Income Tax Return

For calendar year 1983 or other tax year beginning ...., 1983, ending ...., 19 .....
▶ For Paperwork Reduction Act Notice, see page 1 of the instructions.

OMB No. 1545-0123

1983

Check if a—
A. Consolidated return ☐
B. Personal Holding Co. ☐
C. Business Code No. (See page 7 of instructions)

Use IRS label. Otherwise please print or type.
Name
Number and street
City or town, State, and ZIP code

D. Employer identification number
E. Date incorporated
F. Total assets (see Specific Instructions)
$

G. Check box if there has been a change in address from the previous year

Gross Income

1 (a) Gross receipts or sales $ .... (b) Less returns and allowances $ .... Balance ▶ 1(c) ▶ ☐
2 Cost of goods sold (Schedule A) and/or operations (attach schedule)
NET RECEIPTS 3 ~~Gross profit~~ (subtract line 2 from line 1(c))
4 Dividends (Schedule C)
5 Interest
6 Gross rents
7 Gross royalties
8 Capital gain net income (attach separate Schedule D)
9 Net gain or (loss) from Form 4797, line 14(a), Part II (attach Form 4797)
10 Other income (see instructions—attach schedule).
11 TOTAL income—Add lines 3 through 10 and enter here ▶

Deductions

12 Compensation of officers (Schedule E)
13 (a) Salaries and wages $ .... (b) Less jobs credit $ .... Balance ▶ 13(c)
14 Repairs (see instructions)
15 Bad debts (Schedule F if reserve method is used)
16 Rents
17 Taxes
18 Interest
19 Contributions (not over 10% of line 30 adjusted per instructions)
20 Depreciation (attach Form 4562) 20
21 Less depreciation claimed in Schedule A and elsewhere on return 21(a) ( ) 21(b)
22 Depletion
23 Advertising
24 Pension, profit-sharing, etc. plans (see instructions)
25 Employee benefit programs (see instructions)
26 Other deductions (attach schedule)
27 TOTAL deductions—Add lines 12 through 26 and enter here
28 Taxable income before net operating loss deduction and special deductions (subtract line 27 from line 11) ▶
29 Less: (a) Net operating loss deduction (see instructions—attach schedule) 29(a)
(b) Special deductions (Schedule C) 29(b)
30 Taxable income (subtract line 29 from line 28)
SURCHARGE 31 TOTAL TAX (Schedule J)

Tax

32 Credits: (a) Overpayment from 1982 allowed as a credit
(b) 1983 estimated tax payments
(c) Less refund of 1983 estimated tax applied for on Form 4466 ( )
(d) Tax deposited with Form 7004
(e) Credit from regulated investment companies (attach Form 2439)
(f) Federal tax on special fuels and oils (attach Form 4136)
33 TAX DUE (subtract line 32 from line 31—if line 32 is greater than line 31, skip line 33 and go to line 34). See instruction C3 for depositary method of payment
(Check ▶ ☐ if Form 2220 is attached. See instruction D.) ▶ $ ....
34 OVERPAYMENT (subtract line 31 from line 32)
35 Enter amount of line 34 you want: Credited to 1984 estimated tax ▶ .... Refunded ▶

Please Sign Here
Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.
▶ Signature of officer | Date | ▶ Title

Paid Preparer's Use Only
Preparer's signature ▶ | Date | Check if self-employed ▶ ☐ | Preparer's social security number
Firm's name (or yours, if self-employed) and address ▶ | E.I. No. ▶ | ZIP code ▶

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Senator **Packwood**. Ms. Beatty, let me ask you this:

The criticism of your surtax is a valid criticism. Not only does General Electric, therefore, pay no Superfund tax, because they did not have Federal income tax liability, but it is disproportionate in its effect depending upon whether you are a high-tax or a low-tax industry.

Why did you happen to come to a surcharge based on corporate income taxes paid rather than a Bentsen-Wallop broadbased tax or a Bradley broadbased tax or any of the alternatives that Professor Nordhaus suggests?

Ms. **Beatty**. Senator, first of all we wanted to find some alternative that would be related to ability to pay, and we thought, well, what is the simplest measure of ability to pay? You can look at what you owe in tax or whether you incur a tax liability.

It was never our intention to imply that there isn't another way to define profitability.

Senator **Packwood**. But you are not opposed to some broadbased tax?

Ms. **Beatty**. No, we do not oppose that. It was really beyond our ability in the company to analyze what would be a better place to impose the tax.

Senator **Packwood**. Dr. Nordhaus, how much money do you think we are going to need over the next 5 years?

Dr. **Nordhaus**. Mr. Chairman, I am not an expert on that question. I only know what I read in the papers and in the reports. It looks to me, from what I have heard this morning and from what I have read, that the administration is probably at the low end; but how low they are, it's hard for me to say.

Senator **Packwood**. Do you think it is necessary to have some equivalent of a waste-end tax simply as a deterrent? Or would you, given your druthers, go without it and rest the entire cost of this on some broadbased industry tax?

Dr. **Nordhaus**. I actually think the waste-end tax is a good measure on its own, independent of the fact that it will also raise revenues. And the reason is that it gives fiscal teeth to our regulatory programs.

One of the things that has been lacking in this country is an attempt to put fiscal incentives behind our regulatory programs, particularly the EPA regulatory programs. One of the strongest points behind the waste-end proposals, particularly the non-administration proposals, is that they provide incentives for companies to dispose of their wastes in socially acceptable ways.

Might I add, Senator, that I think this is the major flaw in the administration approach as I read it. (I couldn't understand today's justifications because the Treasury witness today was going too fast for me to understand what he was saying.) In its written proposal, the Treasury imposes the tax on all waste received, and does not exempt, as most of the other proposals do, wastes that are treated or incinerated or recycled.

Now, it is important in a waste-end tax to exempt from the tax those disposal techniques which are desirable or preferable, and I would hope you would incorporate that in your own tax.

Senator **Packwood**. It was not the speed of the Treasury's statement that made it difficult to comprehend. [Laughter.]

Dr. **Nordhaus**. Well, let me err on the side of generosity and assume it was, sir.

Senator **Packwood**. Senator Bradley?

Senator **Bradley**. Thank you very much, Mr. Chairman, and I thank the panel and particularly Dr. Nordhaus.

I might mention, we often think that our actions will have a longlasting impact on generations to come, and indeed that is the senatorial expectation. But I would simply like to reflect that Dr. Nordhaus will have a much greater impact on future generations as becoming the co-author of the basic economics textbook that will be used in every university for the next 20 or 30 years. So, let me just say that he has a very big responsibility, not only today but in the years to come.

Let me try to deal with some of the issues that have been raised about the various proposals. I think the issue here is to try to get the committee to focus a little bit on what are the strengths and advantages of the various proposals that are broad based.

In this document that the Joint Tax Committee produced and in your testimony, you reflected a little bit on which of the proposals—net receipts or the value added approach. How would you compare complexity and simplicity of the various proposals?

Dr. **Nordhaus**. First, Senator, let me say we shouldn't let the best be the enemy of the good here, because I think all three of the proposals are good and far superior to proposals that were being considered last year, such as augmenting the feedstock taxes by a factor of five.

So I would just like to say at the beginning that all of the broad-based taxes, properly draped, would be superior to many of the other proposals.

Senator **Bradley**. I don't so much want you to play one off against the other as to talk about what are the general principles that we want to follow to have the simplest kind of approach.

Dr. **Nordhaus**. Well, I just wanted to make sure that what I proceeded to say was not taken as a criticism of what I think is a very constructive approach to this problem.

Now, between the three sets of proposals—the receipts tax, the generalized income tax, and the manufacturers excise tax—it seems to me there are a couple of points. One is that the manufacturers excise tax seems to me the only one that would impose any significant administrative burden either on the Government or on taxpayers, because it would require a new set of definitions. It would require us to define what we mean by "manufacturing activities," and it would require a rebate mechanism, which may or may not be complex depending on how it is ultimately designed.

On this one, let me just say that I think we could improve on the manufacturers excise tax by defining the industries in terms of SIC codes rather than a more general and vague definition such as "something to which labor or skill is applied," which is in the current bill of Senator Bentsen. I think it would be better, as a matter of tax policy, to define the universe of activities in terms of the standard industrial classification, SIC, codes, because those are well defined. There is a whole handbook on those activities. Every activity in this country is included in an SIC code; so I think that would greatly simplify that tax.

Senator **Bradley**. Instead of——?

Dr. **Nordhaus**. Well, let me just read from the Bentsen-Wallop bill. It defines manufacturing activities as "those to which labor or skill is applied by hand or machinery to produce a certain kind of substance." I think it would be more useful to define it in terms of manufacturing or construction, transportation, et cetera, rather than a vague definition. And I think that would handle a lot of the vagueness that I perceive in that proposal.

Senator **Bradley**. In your testimony you also talk about the net-receipts tax, and you make the point that it would have negligible effects on a U.S. firm's ability to compete. Could you give us a few examples of how a tax of less than a tenth of a percent might have negligible effects?

Dr. **Nordhaus**. I was thinking about how to do that. I thought the easiest way was to compare it to the every day vicissitudes that businesses face.

On Tuesday the dollar rose about 2 percent in foreign exchange markets. That movement would have approximately 30 times more impact on trade than would any of the broad-base taxes. So that will give you an example of the relative effects on trade in the broad-based tax versus the every day vicissitudes of business life.

Senator **Bradley**. So that they are much more similar, as you said, than they are different?

Dr. **Nordhaus**. They are very similar in terms of their impacts on trade, and the fundamental point is they are negligible.

Dr. **Bradley**. Thank you.

Senator **Packwood**. Senator Bentsen?

Senator **Bentsen**. Well, it seems to me what we are trying to do in the way of objectives is, first, to keep it simple. And then, we don't want to burden any one industry too much. Then we want to keep U.S. industry in as competitive a position against foreign industry as we can, certainly as much as it would be without the tax.

Now, Mr. DiBona, you are effectively representing industry here. Do you think we have accomplished that with the manufacturers excise tax?

Mr. **DiBona**. I think that has clearly been done. We looked at that in terms of four criteria, and they were whether there was an environmental nexus—that is, whether the payment of the tax might relate in some way to the character of the problem. And we think when you look at the character of these sites, and you look at what has been put in these sites and by whom, this probably provides this nexus as well as any device can reflect the problem that was created by people who you neither can not identify or are not solvent. But the principal beneficiaries are pretty broadly based, and therefore we think it does that.

Second, we were particularly concerned about import-export neutrality, and the degree to which this tax creates a problem would depend upon what the size of the tax might ultimately be. But when you contrast it and compare it with the alternatives like a feedstock tax, any one of these, and particularly the manufacturers excise tax, does have that virtue—that is, it does not discourage U.S. exports nor encourage imports into the United States, a problem that was getting to be dramatically large.

With regard to competitive impact, it—that is, competition among industries and between sectors—we think it minimizes that problem.

Then finally, one gets to the question of administrative cost and complexity, that point that has been made here. We have looked at this very carefully, and we have asked the tax people in the companies who are quite familiar with the problems involved in collecting and paying taxes through their own association with excise taxes, on gasoline, familiar with the rubber excise taxes. There are a number of manufacturers excise taxes in the United States. They essentially were able to construct a system, very much like the system you have constructed in your bill, Senator Bentsen. And in theirs, they used the existing definitions that underly the current manufacturers excise taxes, simply broadening them.

And so, we find first that the problem of definition is not a major one and can be resolved through the current code. Second, by limiting it to manufacturers, we significantly limited the administration's costs relative to what was considered, for example, in this study done by Treasury that was mentioned earlier. We believe the total cost will be between $20 and $50 million a year. That is considerably less than the amount that Treasury indicated here this morning it would cost to manage their waste-end tax.

Senator **Bentsen**. Thank you very much, Mr. DiBona, because we certainly were concerned about having it simple. I think Dr. Nordhaus is right on that, that we should work at that. But I think we have addressed that problem.

I do think, though, that we must have a good definition of "manufacturing." And we are working with the Joint Tax Committee and others to bring that about, and to tie it into the concepts of the code as it now stands.

As far as other complexity, I think, Mr. DiBona, you are right, it shouldn't be difficult to determine taxable sales; we've got that on the tax return now. And I think the same thing applies to the rebate mechanism. The numbers come off the return—taxable purchases. We have not been unaware of that concern and have tried our best to address it, and I think we have. But obviously, we are prepared to have other modifications to further that objective.

Senator **Packwood**. Senator Boren?

Senator **Boren**. Mr. Chairman, I apologize for being detained. I wanted to hear personally the testimony by this panel. I have read the summary of remarks and have read at least one of the detailed statements, and I want to commend them on the statements they have made.

I think it is extremely important that we use the approach of a broadbased tax collection. By going the feedstock route, as has been pointed out by Dr. Nordhaus and others in testimony, we certainly maximize trade distortions. And when we go the narrower route also, we have geographic distortions to which, as a Senator from Oklahoma I am very sensitive, because three or four States would end up paying the vast majority of the amounts of the narrow approach, even though we don't necessarily have but a tiny proportion of the hazardous waste sites that are due to be cleaned up.

So there are distortions in trade, there are distortions in terms of geographic fairness and all of us dealing together with a national problem, and it is a problem that we do want to address.

I think Senator Bradley and Senator Bentsen and other Members of the committee are making a great contribution in terms of coming up with a fairer approach, and testimony from this panel today will be very helpful to us in doing that.

I am disappointed to hear that the Treasury, without an economic justification that I can see, seems to be taking a slightly different approach. I hope they will change their minds, especially when they look at the relatively low cost of administering a broader based tax and at the fairness of it and at the reduced distortion on the economy.

So I won't take further time—we are at the end of the morning—to ask questions, but I simply say I do commend the panel, and I agree generally with the direction they are trying to go.

Senator PACKWOOD. Dave, we went so far as to indicate, in response to Senator Bradley's question, that if we wanted to have more money in the Superfund than the administration asks, they would prefer to do it with an expanded feedstock.

Senator BOREN. I just can't understand that. I am told there was no lengthy economic justification for the merits of that proposal, and I am very disappointed that they would give that answer, because I think, very clearly, all the evidence and economic reason would point to a broadbased approach.

Senator BRADLEY. Mr. Chairman, if you would yield, if you recall the wording of the question, I said to the witness that if he had the gun to his head, what would he decide? People make mistakes when they have the gun to their head. [Laughter.]

Senator PACKWOOD. Supposedly, we hope, that's what he did.

Senator BRADLEY. May I?

Senator PACKWOOD. Go right ahead, Bill.

Senator BRADLEY. I would like to follow up, just to get the record straight—not that this is a serious objection, but just to ask Dr. Nordhaus—and you can give a very brief answer:

Is there any reason to believe that a broadbased tax of the dimension of either one of these bills would have any effect on the recovery?

Dr. NORDHAUS. I think the gentleman from the Treasury misspoke. In fact, an increase in the tax which accompanied an equal increase in expenditures in the Superfund would not have a contractionary effect on the economy but would have a miniscule expansionary effect. So I think he just misspoke. But for your purposes, I think I would just round the impact to zero.

Senator BRADLEY. All right.

Help us think through the breadth of this tax now, Dr. Nordhaus. The two approaches come out just a little differently. One deals with manufacturing firms, 500,000 or so—and don't hold me to that number, but manufacturing firms. The other deals with all firms above a certain level of sales—$50 million—about 10,000 firms.

Now, we take the manufacturing sector. There is interest here in trade questions. We have dismissed that as negligible. But how would you weigh the relative merits of achieving breadth through limiting the number of firms available for tax but including both service and manufacturing versus putting it on manufacturing firms no matter what the size?

Dr. **Nordhaus**. When we first started thinking about this, we saw a considerable appeal to the idea of limiting it to the industrial or manufacturing sector of the economy.

Our problem was, we could not figure out a way to do that without introducing new complexities into the tax code. Now, if this were a larger matter, it might be worth it; but we should be very reluctant to introduce new complexities into the code when we are raising less than a billion dollars.

The reason a complexity arises is that for purposes of corporation taxation, firms do not need to declare which industry they are in. Most firms are in many industries and would have to somehow divide themselves up between manufacturing and nonmanufacturing.

It seems to me, in the end, for the kinds of revenues we are talking about, that was not worthwhile.

Second, if you did that, unlike the broader based proposal, then you really do have to start worrying about the trade impacts, because manufacturing is so heavily exposed to trade, and you would almost inevitably get involved in the complicated credit or rebate mechanism. So that is another reason, I think, to go to the broader of the broader based taxes, that by doing so you cover not only trade exposed but non-trade exposed industries, and you do not need to get involved in a credit or rebate mechanism.

Finally, to come back to an earlier comment you made about the Baptist Church, or whatever it was——

Senator **Bradley**. Well, the owners of these dumps, which are banks and service industries.

Dr. **Nordhaus**. Right.

In our study we investigated the ownership of NPL sites, and we tried to classify them by their industry—to see whether in fact the current tax had its incidence on those industries that were owning sites.

We found that, of the NPL sites, only 18 percent were owned by firms in the taxed industries, and only 35 percent could be identified as manufacturing firms.

We therefore concluded from that that there was some equity in having a tax that fill outside manufacturing as narrowly defined.

There is no doubt that there would be some inequities, that you will find some industry that would be taxed that was never involved in a site and had never seen, heard, smelled, or sensed a toxic waste of any kind. But it seems to me that trying to define that for this level of taxes was too costly and not worth it.

Mr. **DiBona**. Could I add an answer to that?

Senator **Bradley**. Sure.

Mr. **DiBona**. Your question really is in comparing these alternatives—rather than the question, the answer really was that because the rates are low, these problems of impact on foreign operations, for example, are deminimis as long as one keeps the rate low.

But it has impact more broadly than just on the tax being applied to goods sold abroad and not on imports; it also, among other things, affects the taxation of foreign operations of U.S.-owned companies. By not stepping up to some small level of complexity, you simply accept the fact that you will tax U.S. corporations for their foreign operations, and therefore make it harder for them to operate abroad.

We believe that that's the wrong balance to strike; that is, we believe that the added complexity is not great, and the benefits—as long as the tax is low—are probably not great but significant. And if the tax rate rises, they could be very significant.

So, we think it is important to take that small extra step, which we believe is small, to get these definitions correct. We don't believe it will add much to the complexity, and it is more elegant and clean and will not generate additional problems. It will only add another straw to the problems that people have in competing abroad and facing foreign competition here.

Dr. **Nordhaus**. Mr. Chairman, may I just clarify for 30 seconds on that?

Senator **Packwood**. Yes.

Dr. **Nordhaus**. Our proposal actually differs somewhat from Senator Bradley's in that we exclude foreign source income. So I think to some extent the objection that Mr. DiBona just raised is alleviated, when the net-receipts tax proposal is limited to domestic income.

Senator **Packwood**. Thank you.

Senator Boren, any further questions?

Senator **Boren**. No more questions, Mr. Chairman.

Senator **Packwood**. Bill, any more?

Senator **Bradley**. Just one quick one.

Do all these proposals depend on kind of voluntary compliance? How would we ensure compliance?

Mr. **DiBona**. The manufacturers excise tax would be audited by the Government in the same way that current manufacturers excise taxes are audited. As I understand it, they don't actually go in and individually look to trace every transaction, which is the perception we have, and that is the concern about this invoice method that we think is the best.

What they do, they look at the total tax paid, and they look at other indicators of the sales of that company. And if there is close agreement between those two numbers, they know they are collecting the tax, and they don't need to then do a detailed audit of every transaction. It is only when they observe differences in those two numbers—and it is a very simple process, and they do it for a very large number of corporations. And through that process they are able to catch, with little effort, anyone who is not paying his taxes.

Senator **Bradley**. I'm sorry, which two numbers?

Mr. **DiBona**. They look at indicators of the sales of the corporation, and they look at the tax paid. And they know from that whether or not they are paying the tax. That's all you have to know.

Senator **Bradley**. Thank you.

Senator **Packwood**. Thank you very much.

Now let's take a panel of Dr. Harvey Alter, manager of the resources policy department, chamber of commerce, Washington, DC;

and Paul Wallach, an attorney with Herrick and Smith, on behalf of the National Association of Manufacturers, Washington, DC.

Gentlemen, both of your statements will be in the record in their entirety. I would appreciate it if you would hold yourself to our time limits.

We will start with Dr. Alter.

STATEMENT OF DR. HARVEY ALTER, MANAGER, RESOURCES POLICY DEPARTMENT, CHAMBER OF COMMERCE OF THE UNITED STATES, WASHINGTON, DC

Dr. **Alter**. Thank you very much, Mr. Chairman.

I am Harvey Alter, and I am manager of the resources policy department of the U.S. Chamber.

It seems almost unnecessary to reiterate our support for Superfund. I don't think supporting it or not has ever been a national issue. We supported it in 1980 and continuously since then.

Also of late we, like you, have debated and struggled for a long time over the various issues involved in Superfund. We do not envy you or anybody else this job.

We certainly support the Superfund and its original purpose. And any expansion, including what has been included in S. 51, we do believe it should be a separate legislative process. S. 51 introduces some new concepts and programs, well beyond the cleanup.

We support about a 3⅓ times increase over the original fund, which we believe to be a large jump. This is another way of saying that we support EPA's estimate of about $5.3 billion. We think this is the appropriate amount right now for a variety of reasons:

Briefly, EPA has the most experience of anyone in administering such a program. They have been clear, today and at other times, as to what can be managed efficiently over the next 5-year period. Of course beyond that judgments might change.

Authorization in excess of what can be sensibly spent will lead to waste. An aspect that has not come out is that such waste will lead to an ultimate loss of public confidence in the program. That bothers us no end.

Third, there is a practical limitation on the pace of the program, on sites which do not present an imminent threat to public health and safety. And I think some of these limitations—putting on my hat as a chemist, now—some of these limitations are beyond what has been discussed today in terms of: Are there enough hydrogeologists around, et cetera, and have to do with something we call "quality assurance programs." Without quality assurance programs, there will be, indeed, a waste of effort.

That brings me to the fourth point for this size of program, which is that cleanup must be achieved the first time around. Overexpansion with zeal leads to mistakes, and we will then all be regretting our actions.

Related, we are here to say that we cannot support section 129, Senator Mitchell's Victim Demonstration Program, and our written statement gives many reasons why we think this program is flawed.

It is important to stress that the chamber has studied the problem of potential injury and compensation for injury from environmental release in probably more detail than anyone else in the country. Heretofore, we have not broadcast that very much, but we will very soon. The report of our Special Expert Council, after almost 20 months of work, will issue soon, and we hope to have a preliminary copy of that report to your committee sometime next week, before it goes to the printer.

Very briefly—based on a 250-page report—we think that section 129 should not be funded because there are numerous public and private insurance and tort remedies now available to anyone who is hurt. Some of these need State and Federal legislative attention, certainly; but our analysis shows most are meeting their intended purposes. Hundreds of millions of people, literally, are covered by insurance programs now.

There is no clear evidence that there are a large number or even scores of people who have been injured; that seems to be a myth that was carried over from 1979. The Victims Demonstration Program does not truly recognize good science, in our judgment, and our report indicates how "good science" should be applied and might be applied, rather than just speak to chic phrases like "peer review."

In short, now that you gentlemen have the unenviable task of debating the budget deficits, we think that talking about what is potentially an open-ended demonstration program for addressing not a real health problem, is inappropriate. We fear that it would be impossible to keep such a program contained.

However, if the problem of injury from waste sites is real, then we think it should be looked at separately, not as an adjunct and a diluent to an important program like Superfund.

Senator PACKWOOD. Thank you, Dr. Alter.

Mr. Wallach.

[Dr. Alter's written testimony follows:]

STATEMENT
on
SUPERFUND IMPROVEMENT ACT of 1985 (S. 51)
before the
SENATE FINANCE COMMITTEE
for the
CHAMBER OF COMMERCE OF THE UNITED STATES
by
Dr. Harvey Alter
April 25, 1985

I am Harvey Alter, Manager of the Resources Policy Department of the U.S. Chamber of Commerce. I welcome this opportunity to appear on behalf of the Chamber, the world's largest federation of businesses and business associations.

The Chamber supported the creation of the Superfund program in 1980, reiterated that support in 1984 (including before this Committee), and we are pleased to be able to express again our support for the national program to clean-up inactive and abandoned hazardous waste sites.

Our support of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and its continuation stems from a commitment to the goals of protecting human health and well-being as well as the physical and biological environments. In our view, these goals are best achieved through policies that not only require, but also encourage, proper environmental management.

The stewardship of natural resources, including the environment, is a broad societal responsibility. The Chamber holds that achieving and maintaining environmental quality is the collective responsibility of all elements of society, employing their joint talents and resources, and working cooperatively with all sectors and levels of government. Too often, however, we find the debate over appropriate environmental policy clouded by expediency and haste, rather than focused on the best means of achieving and maintaining a quality environment. The challenge now before us all is to find ways of improving the Superfund program, weighing carefully the balance between environmental protection and commitment of human and financial resources.

SUMMARY OF THE CHAMBER'S POSITION

The Chamber supports an increase in the size of the fund approximately three-and-one third times the original 1980 level. We share Congress' desire to expedite the program, and recognize that the magnitude of the Superfund effort is greater than originally envisioned. At the same time, the Environmental Protection Agency (EPA) has accumulated experience in managing the program and in achieving results that should not be ignored. We support the approximate $5.3 billion funding level sought by the Administration, and for the reasons outlined below, urge this Committee to limit the fund to that amount.

The Chamber cannot support the "victims' assistance demonstration program" provided in Section 129 of S. 51. As elaborated below, this program is of questionable need and benefit and, while well-intentioned, is likely to mislead its recipients and begin something that can never be terminated nor afforded.

SCOPE OF THE PROGRAM

As we have reviewed various proposals to reauthorize the CERCLA in this Congress and the last, one thing has become increasingly clear: the Superfund cannot and should not be expanded to address all of society's environmental problems. The decisions Congress makes on the scope of the program, and the appropriate uses of the fund, will not only lay the foundation upon which the Superfund program will succeed or not but also will affect other Superfund issues--such as the appropriate and necessary level of funding, liability for clean up costs, appropriate remedies and pace of clean up, among others.

The intent of CERCLA has been and should continue to be to provide an emergency response mechanism for environmental threats posed by inactive and abandoned hazardous waste sites and to provide abatement and long-term clean up remedies to mitigate future threats to human health and the environment. We believe that this is an appropriate goal--one which will require a major, long-term commitment of society's human and financial resources.

The magnitude of the problem posed by inactive and abandoned hazardous waste sites is only now beginning to become clear. Still, there are wide differences in the estimates as to the total number of sites that ultimately will need to be cleaned up. However, even the lowest of the various estimates is indicative of the major undertaking we face in the years to come. The reality of resource and technical limitations dictates a limit to the permissible uses of the fund. We strongly urge this committee to limit the scope of the program to the cleaning up of hazardous waste sites and appropriate health studies for those sites included on the National Priority List (NPL). Expanding the program to cover environmental occurrences not specifically related to hazardous waste sites threatens to diminish the ability of EPA to get the Superfund job done.

SIZE OF THE FUND

We believe that the size of the fund should be limited to an amount the Environmental Protection Agency can effectively manage over the next five years. On the basis of the EPA's experience to date, its assessment of future program needs and an understanding that progress under the Superfund program does not rely exclusively on the amount of available funds, the Administration has proposed in S. 494 that the program be funded at a level of $5.3 billion for the next five years. We support that level as the most realistic and best available estimate to date. We support the EPA estimate also because it reflects the Agency's collective experience of the first five years, an experience and first-hand knowledge nobody else has.

We caution against well-intended, but unrealistic attempts to fund the program at levels far in excess of what EPA has indicated to be an amount that can be managed effectively--that is, an amount that will translate into the environmental benefits the Superfund was created to achieve. Additionally, while we are not in a position to make recommendations on appropriate funding mechanisms or Superfund taxes at this time, we suggest that the and lack of consensus on the tax question might dissipate if Congress would focus on a funding target an order of magnitude 3 to 4 times above current levels rather than 5 to 8.

With our support of a funding level of $5.3 billion dollars over the next five years we stress the following three points:

1. authorization in excess of what can be sensibly managed will lead to waste and ultimate loss of public confidence;

2. the practical limitations on the pace of the program do not present an imminent threat to public health and safety; and

3. clean-up must be achieved the first time around.

Each point requires elaboration.

First, the amount authorized must match what can be sensibly managed. An over-funded program will create unrealistic expectations of progress in the public's mind. If these expectations are not met it will likely lead to future accusations of mismanagement, oversight and investigative hearings, exaggerated fears of endangerment, and a general loss of public confidence. The pace is determined by the ability to manage and implement, which is not related solely to the amounts of availabile money. EPA has indicated what it needs and can manage based on the number of sites and the nature of the work that must be done. Clearly, Congress has the prerogative of reconsidering the funding level if indeed the current estimate proves to be insufficient or the Agency exceeds its projections of the amount of work that can be accomplished in the next five years.

Second, the practical limitations on the pace of the program do not threaten public health and safety. Few understand neither the different authorities the Agency is granted under CERCLA nor that the appropriate response at one Superfund site will not necessarily be identical to another. At present, EPA has the tools for emergency response. Other sites needing clean-up should be managed in a manner that allows remedial actions to be undertaken in sensible stages of assessment, design, implementation and quality assurance--essentially the way the Agency conducts its activities now. Investigation, feasibility assessments, design and construction of these sorts of projects is quite different from management of more familiar public works projects, such as sewers, bridges and roads. We note the wide divergence of opinions as to the exact scope of the problem and the likely duration of the program. This, in part, undoubtably stems from differences in assessments and understanding of what it takes to get the job done. All of these assessments and judgements are being made in the face of great uncertainty but are sharpening with experience. We have already seen a narrowing of views over the past five years as each site activity improves the ability to judge the future.

Third, is the very real danger that clean-up activities will not be done right the first time if a massive rushed program is attempted. Attacking sites zealously rather than with a well thought-out plan, will result in poor quality control. Concern has already been raised about the need for permanent remedies, rather than moving Superfund wastes from site-to-site. Permanent remedies are needed, but they are unlikely to be developed and properly implemented in an atmosphere of haste, fear and distrust.

As a chemist I am concerned about the increased demand upon my profession to detect, monitor, and control a wide diversity of trace substances in the environment. The analysis of such materials is often difficult, time consuming, complex and demanding on the skills of even well-trained analytical chemists equipped with the most elaborate and expensive devices. Not all of the analyses are routine. We must recognize that the establishment of proper analytical quality assurance programs on a national scale takes time.

Overall, the concern with site clean-up should be with quality as well as quantity. When the Superfund program is judged complete, there should not be a long list of sites that were not properly handled. An over-expansion of the program by throwing money at the problem will not assure the overriding goal of protection of public health and the environment.

INJURY COMPENSATION MECHANISMS

The Chamber recognizes that in a technologically advanced society individuals can be exposed to hazards that may result in injury through no fault of their own. At the same time, there are numerous remedies presently available to provide compensation for injury: common law tort liability and its statutory derivatives, statutory no-fault administrative systems, hybrid statutory and common law remedies, contractual insurance coverages, and a wide variety of taxpayer and industry-financed public programs.

Viewed against their intended goals, the Chamber believes that each of these systems works reasonably well for most Americans. At the same time, improvements are needed, such as in the tort and workers' compensation systems. Also, adjustments in one or more of the other systems may be appropriate to rectify specific inadequacies and ensure that those deserving compensation but not receiving it do. At the same time, we encourage improvements that will not jeopardize the entire foundation of these well-established compensation systems.

The Chamber prefers the term "injury compensation" to the more often used and misleading terms "victims' compensation" or "victims' assistance." There will always be debate as to whether or not people exposed to hazards through no fault of their own or through no known fault of another are "victims." The issue, however, really is this: are people being injured by exposure to hazards--in this case hazardous waste--and going uncompensated? The use of the term "victim" presumes the answer to the first part of that question. The inclusion of Section 129 in S. 51 additionally presumes that these alleged "victims" are not being compensated.

The Chamber believes that those truly injured by exposure to hazardous waste due to no fault of their own and who are not being compensated should be assisted. However, we contend that (1) insufficient evidence has been brought forward to conclude that such a class of people does indeed exist, and on the basis of a nearly two-year study by our members (2) the perception that many now go uncompensated is based on a misunderstanding of the extent to which injured Americans are presently receiving compensation in various forms. For these reasons, we cannot support Section 129 of S. 51 which we find to be a well-intended but poorly substantiated and structured attempt to assist a class of people no one has yet been able to identify.

Of specific concern to this Committee is the funding of the victims' assistance demonstration program provided in Section 129. S. 51 provides that the program be funded from the general revenue portion of Superfund monies. We urge that Section 129 not be financed for the following reasons.

Section 129 is a vague attempt to address a problem that is more a matter of perception than of fact. Since about 1979, there have been claims, widely reported in the media and generally accepted by the public, that hazardous waste sites have created health problems for surrounding residents. Outside of psychological stress, which could have been effected and/or exacerbated by media reports, and one known incidence of arsenic contamination of drinking water, medical studies have not shown measurable and/or scientifically attributable public disease problems related to hazardous waste site exposures. We commend a recent scholarly and careful review of health data to the Committee.*

There have been large and now continuing efforts to monitor people living in the vicinity of hazardous waste sites. It is only right and proper that these efforts continue. At the same time, caring and compassion for those who may be ill through no fault of their own, as demonstrated by continuing surveillance and epidemiological efforts, should not be confused with Section 129.

Essential provisions for the demonstration program are grants of not less than $1 million, no more than $10 million, each for not less than five nor more than ten demonstration areas, not to exceed $30 million each year for fiscal years 1986 and 1987, although the operating period for each program is three to five years.

The drafters of this section attempted to define which populations should be included, but confuse exposure, risk, injury and disease. Whereas the section calls for peer reviewed studies and "sound scientific and medical criteria," the legislative language has a doubtful nexus between a released substance in question and a resultant disease. This means that the program could be opened to a wide variety of claims for diseases that indeed might be peer reviewed and diagnosed but not necessarily specifically related to or caused by a hazardous substance release. Further, definition of exposure is insufficient; viz., disease can be caused only by inhalation, ingestion or permeation through the skin, not merely by living in an area near a hazardous waste site.

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* Health Aspects of the Disposal of Waste Chemicals. Universities Associated for Research and Education in Pathology, Inc. Bethesda, Maryland. 1985.

The demonstration program addresses symptoms that are present or are later developed. There is no adjustment for nor recognition of normal incidences of disease symptoms, especially as the population ages. By the way that it is defined, the program opens up claims for potentially unlimited numbers and types of illnesses and thereby begins an open-ended entitlement program directed at only a few areas of the country. Judging from the history of a similar program that began with limited intentions (e.g., Black Lung) it is difficult to imagine that those individuals not eligible because a site in their vicinity was not selected for the demonstration would accept their exclusion if they believe themselves to be otherwise deserving. Pressure to expand the program nationally is likely. Clearly Superfund was never intended to be the precursor to a national health insurance program.

Section 129 never specifies how such a program will be judged as to its success or need for continuation. Additionally, the problem of scientific causation is not resolved. Rather, case-by-case causation is overlooked, which will reinforce the fear that living near a site can cause serious illness. Further, how long the medical insurance policy provided is to run is unclear (presumably through 1990); long-latency diseases are seemingly overlooked--this vagueness alone could later be used to extend the program to perpetual care.

Section 129 will not aid people who are ill but will penalize the taxpayers of America for a well-intentioned but misguided desire to address a perceived but as yet unidentified problem. The Chamber's undertaking to assess the adequacy of existing remedies for compensating injured persons is described below. We call it to the attention of this Committee and urge that Section 129 not be funded.

DESCRIPTION OF THE CHAMBER'S STUDY

The general subject of unintended injury to people as a result of exposure to hazardous substances is of broad interest to the business community. Examination of the scope of the problem, identification of specifics, and means of dealing fairly with those who might be so injured require the expertise of many disciplines. Approximately 20 months ago, the Chamber convened what was called the ad hoc National Business Council on Injury Compensation to develop recommendations as to how the business community could responsibly respond to problems related to exposure to hazards.

The Council of approximately 45 professionals included experts in law, toxicology, epidemiology, insurance, chemistry, engineering, consumer product safety, worker safety, environmental management, and more. Most members were drawn from the approximate eight policy committees of the Chamber affected by this important issue. Others were added to assure that all necessary disciplines were represented. The Council was chaired by Mr. Van Smith, Chairman of the Board of the U.S. Chamber, an attorney and small businessman with direct experience in some of the fields of import.

The Council addressed three broad sub-sets of the subject: (1) the extent of public and private coverage for people harmed through no fault of their own--including administrative and legal remedies, such as insurance and tort; (2) the relationship between medical causation and law and how to bring the two closer together; and (3) a review of legislative and related proposals to deal with injury compensation.

The Council identified that in 1982 (some statistics were for 1981) first-party insurance and tort payments totaled $142.5 billion, indicating that at least this level of compensation was provided for varying types of disease and injury. Federal government payments alone for health and disability in 1981 were $109.6 billion for some 38.8 million beneficiaries. Approximately 108 million persons were covered by health insurance, 164 million covered for physician's expenses, 158 by major medical, and 80 million by disability, among others. On the basis of this and other information, the Council found that the present extent of coverage is broad.

A review of the present tort system showed both successes and failures in providing recourse for injured parties. Some needed improvements were identified. Both the insurance and tort systems in place today were judged against their intended goals.

At the outset, an attempt was made to identify those groups in our population who may be falling through the safety net of public and private compensation systems. Research showed that this was not possible. However, those caught by this net could be counted (although not unambigiously), and the number is quite high.

The nexus between science and law, for the determination of causation, was examined. Proper determination of causation is essential in order not to deny those harmed from compensation (and treatment) and not to charge falsely those who are not responsible. At the same time, it was recognized that science is rarely able to unequivocally establish causation. Medicine, biology and the related sciences needed to establish causation are complex and incomplete in their understanding of disease etiology and the human body. A patient's medical history and life-style enter into questions of causation as well.

The Council not only called for the wider application of "good science" but also outlined how this might be achieved. Koch's postulates of causation, first published in the last century and updated with the understanding of viral diseases, still hold. The Council outlined how these might be applied in independent determinations of causation and responsibility.

They reasoned that bringing good science into the decisionmaking process will not cure the problem presented by juries who rule for plaintiffs out of sympathy for their injuries or diseases rather than by a weighted conclusion of the defendant's responsibility. This problem should be dealt with by determining causation and responsibility issues first and separately from issues of injury and damages and certainly not in the reverse order. The scientific data needed to establish a standard of scientific proof should consist of adequately controlled studies in animals and/or humans by methods technically and reasonably applicable and acceptable to the professions. Methods for applying this standard and related standards of professionlism to determining causation have been outlined by the Council.

Finally, the Council reviewed and criticized (positively and negatively) several proposals for dealing with injury compensation. For example, in discussing health surveillance programs (HSP) to identify and screen health problems before they become catastrophic (similar to what is described in Section 129 of S. 51), the Council made the following observations.

Because HSP is designed for prevention, it has an obvious advantage for those exposed as well as those potentially responsible over plans that are solely compensatory. Some of the injuries that threaten to lead to expensive tort suits could hopefully be caught in the early stages, assuming this is possible. The tort system would not have to be modified. Finally, HSP appears to be designed, in part, to educate the public. If those exposed to an environmental release are shown to be free of harm, it can be expected that much of the fear of future injury would start to dissolve.

Because HSP remains a relatively new concept, all of its strengths and weaknesses are not clear. However, from business' viewpoint, there are certain disadvantages. For instance, those involved with a release would not be shielded from tort suits and damages related to the release by having participated in the program. Additionally, a screening program, through medical examinations, may encourage more law suits (some of which may be less meritorious than others) and provide a new means to assist potential plaintiffs, regardless of merit, in their cases. Such details must be clearly established in advance, assuming such is possible and considering the possibility and fear of long-latency disease.

The ad hoc National Business Council on Injury Compensation made several recommendations, which were adopted as policy by the Chamber's Board of Directors. These are included here as Appendix 1. We urge the Committee's careful review of the Council's report which is being printed now for public distribution.

BEST COPY AVAILABLE

CONCLUSIONS

Superfund should be reauthorized to continue and expedite the national effort to clean-up problem hazardous waste sites. The program should be restricted to that narrow purpose: other purposes should be separately debated and legislated.

The Chamber can support the widely expanded funding level of $5.3 billion for five years, as recommended by the EPA Administrator and proposed in the Administration's Superfund bill. Increasing the fund beyond this amount would be beyond what can be sensibly and responsibly managed. The program should be closely monitored; and if this situation changes, Congress should reconsider the program.

Finally, the Chamber believes that Section 129 of S. 51 is unwarranted. It is premature in that it addresses a problem of perception, not one of fact that has been properly defined. Further, if such a problem is found to exist, possible solutions should be evaluated in the context of the vast array of existing public and private insurance (and other) programs. Specific recommendations in this regard are appended, substantiated by an almost two-year study by experts.

Thank you for the opportunity to participate in these hearings.

Appendix 1. RECOMMENDATIONS OF THE AD HOC NATIONAL BUSINESS COUNCIL ON INJURY COMPENSATION

In a technologically advanced society, individuals can be exposed to hazards that may result in acute or chronic injury due to no fault of their own. It is a long-standing tradition of American society to seek to ensure that injured individuals are cared for and appropriately compensated. The U.S. Chamber supports the continuation of this tradition as an important element of a society that places a high value on fairness and the well-being of its people.

There are numerous remedies presently available to the American public to provide compensation for injury. These existing compensation systems include common law tort liability and its statutory derivatives, statutory no-fault administrative systems, hybrid statutory and common law remedies, contractual insurance coverages, and a wide variety of taxpayer and industry financed public programs.

Viewed against their intended goals, the U.S. Chamber believes that each of these systems works reasonably well for most Americans. At the same time, improvements are needed, such as in the tort and workers' compensation systems. Also adjustments in one or more of the other systems may be appropriate to rectify specific inadequacies, and ensure that those deserving compensation, but not receiving it, do. The U.S. Chamber encourages modifications, where necessary, at the appropriate level of government, that will achieve improvements without jeopardizing the entire foundation of these well-established compensation systems.

In determining compensation for injury, questions of causation need to be addressed. The extent to which these questions are adequately answered is a measure of both the fairness of the system for the parties involved, as well as of the degree to which the system meets society's injury compensation goals. Greater attention and effort must be applied to join the requirements of both administrative and legal compensation systems with the requirements of science in determining injury causation. The U.S. Chamber supports efforts to better clarify and refine the nexus between science and law in determining compensation and encourages its members to work with the public, the scientific community, and government to achieve this goal.

When determining modifications that may be necessary in existing compensation systems, and in evaluating the need for any new system, careful consideration must be given to the intended purposes of each and the trade-offs that may be involved in selecting among various injury compensation policy options. The Chamber offers the following principles to guide the evaluation and selection of new proposals, or modifications to existing compensation systems.

- Most existing compensation systems fall into one of two categories:

  - fault-based systems, in which individuals who are harmed by the fault of another are compensated by the wrongdoer; or

  - no-fault systems, in which individuals who are harmed are compensated without regard to fault.

  Compensation systems developed under the first category are designed to perform different functions than those of the second. These distinctions are important and should be maintained.

- The tort liability system is no longer the only means of assuring compliance with societal norms. Other societal institutions also play a significant and increasing part in setting and enforcing standards of behavior. Therefore, compensation systems should not be viewed or used as the primary means to punish, blame, or prevent socially unacceptable conduct.

- Distinctions must be made between the desire to compensate and punish harmful conduct that is wrong, and to compensate for the consequences of harmful conduct that is not wrong. Affixing blame and assessing damages to punish and deter harmful conduct where fault is not at issue are inconsistent and inherently unfair.

- Balance must be struck among the level of proof required of claimants, the amount of blame attached to defendants, and the amount of compensatory awards. A fair and practical compensation system must consider the trade-offs that exist among the often competing interests of damages allowable, proof of causation requirements, evidentiary standards, the exclusivity of remedies, and who should pay. In order for a system to be workable and fair, both plaintiffs and defendants will have to balance these choices.

- Compensation systems must recognize that, while innocent defendants should not be punished, innocent claimants may well have legitimate needs which require compensation.

- Where compensation costs are imposed on industry, there must be recognition that these extra costs may have adverse social consequences. These social consequences must be considered and balanced against the need and purpose of any new proposals or modified compensation systems. Efforts must be made to minimize aggregate costs and eliminate excessive transaction costs.

- Because financial resources are finite, the types and amounts of compensatory awards allowable under any one or a combination of compensation systems must be chosen carefully and weighed against other important resource commitments deemed necessary by society. Policy choices must recognize that resource commitments in one area may foreclose commitments in other important areas.

STATEMENT OF PAUL WALLACH, ATTORNEY WITH HERRICK & SMITH, ON BEHALF OF THE NATIONAL ASSOCIATION OF MANUFACTURERS, WASHINGTON, DC

Mr. WALLACH. Thank you, Mr. Chairman.

I am Paul Wallach, an attorney in the Washington office of Herrick & Smith, and I am testifying here today before you on behalf of the National Association of Manufacturers. I am pleased to be accompanied by Richard Seibert, NAM's vice president for resources and technology.

It goes without saying that NAM members have a deep interest in the effectiveness of the Superfund, and I can therefore say that we very much appreciate the opportunity of being here today.

It also goes without saying that NAM supports the reauthorization of Superfund and strongly supports the act's ultimate objective, which is the quick and safe cleanup of the abandoned waste sites throughout our country.

Today I would like to briefly address two aspects of Superfund reauthorization, and S. 51 specifically: The size of the fund and the so-called Victim Assistance Demonstration Program contained in section 129.

Some 8 months ago this committee held 2 days of hearings on proposals to extend Superfund. The week prior to those hearings, the Senate Environment Committee reported S. 2892, which would have expanded program responsibilities to a cost of roughly $7.5 billion over 5 years.

Almost all who testified at those hearings, or the vast majority, expressed unequivocal concern that, by either overfunding the program or by adding provisions that were irrelevant to the Act's principal objective of cleaning up abandoned or uncontrolled waste sites, that Congress ran the serious risk of substantially hampering a program that had finally begun to work.

Bill Ruckleshaus had also emphasized earlier in the year, in testimony before several committees of Congress, that additional infusions of funding beyond EPA's capabilities, and I quote, "would have the paradoxical effect of retarding our activities, not speeding them up."

Bill also warned that additional infusions of money at too great a rate had the potential for promoting great fiscal waste.

In his testimony before this committee last year, Lee Thomas expressed similar concern about building in waste. He said, and I quote, "The Superfund program is in many ways a construction program." I would like to add to that from my experience, which is oftentimes out in the field at these various Superfund sites with manufacturing firms and other companies, that unless every aspect of the Superfund program, be it planning, design, or construction, is undertaken by qualified professionals, you are going to find that, with the analogy to the construction program, that your buildings have failed, and that they too will become part of this nation's future hazardous waste problem.

In line with the recommendations you have heard from Lee Thomas today concerning level of funding, he has asked for a $5.3 billion reauthorization over a 5-year period. Nonetheless, the Senate Environment Committee reported legislation asking for $7.5

billion, and various other current proposals seek funding levels up to $12 billion.

We believe that the reservations about excessive funding are compelling. I would like to just explain very quickly:

First of all, they all want hazardous waste sites to be remedied as quickly as possible. We are equally concerned that remedial actions be well planned and well executed. The objective has got to be safe and quality cleanup.

Prior to 1981, EPA was a novice in the field of cleaning up toxic waste sites. Early experiences with Superfund demonstrated that, notwithstanding expenditures of massive sums of money, in several instances acutely toxic wastes were simply transported by Government vehicle from one leaking waste site to another.

EPA has since learned the ropes, often through trial and error, as well as the serious consequences that can result from a less than professional cleanup or adequate disposal of the removed wastes.

Unfortunately, EPA's current level of activity is, as Lee Thomas testified, taxing the limits of that professionalism. There are simply not enough research labs, experienced personnel, adequate disposal, or treatment facilities to go around.

Thus, we strongly concur with $1 billion a year the EPA is seeking.

Briefly, I would also like to comment on section 129, the Victim Assistance Program. It is of considerable concern to NAM, and I believe that it warrants close scrutiny by this committee, for it would establish an entirely new right to compensation from the Federal Government.

The United States already devotes an enormous amount of resources to persons requiring medical evaluation and medical care compensation. There is an informal safety net that has been set up, ranging from the Medicaid and Medicare programs to personal insurance. Unless a need is shown, that is, that that safety net is not working—and I have not seen any evidence from my experience in the field that it is not—then I would say that the expenditure of additional millions if not billions of dollars cannot be justified.

The demonstration program also raises serious questions about its scope.

I don't see a way to really contain the program. I think the black lung program is an example of a program that cannot be contained. I don't know how you shut off the benefits after 2 years. And perhaps most importantly, I think that the substantial revenues that are going to be expended there are going to take EPA away from the purpose of Superfund, which is cleaning up our waste sites.

I thank you.

[Mr. Wallach's written testimony follows:]

Testimony of
Paul G. Wallach, Esquire
on behalf of
The National Association of Manufacturers
Before the Senate Committee on Finance
April 25, 1985

Mr. Chairman, Members of the Committee, I am Paul G. Wallach, Esq., a partner in Washington Office of the Boston-based law firm of Herrick and Smith. I am testifying before you today on behalf of The National Association of Manufacturers (NAM), and am accompanied by Richard Seibert, NAM's Vice President for Resources and Technology.

NAM is a voluntary business association of more than 13,000 corporations, large and small, located in every state. Our membership ranges in size from very large to more than 9,000 small manufacturing firms, each with an employee base of less than 500. NAM member companies employ 85 percent of all workers in manufacturing and produce over 80 percent of the nation's goods. NAM is affiliated with an additional 158,000 businesses through its Associations Council and the National Industrial Council. NAM members have a deep interest in the effectiveness of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or Superfund, and therefore appreciate this opportunity to testify.

NAM supports the reauthorization of the Superfund. All Americans support the Act's ultimate objective: the cleaning up of abandoned hazardous waste sites in a timely fashion. Today, I would like to address two aspects of Superfund reauthorization and S. 51 specifically: the size of the fund and the victim assistance demonstration program contained in Section 129.

SUPERFUND'S PRIMARY OBJECTIVE MUST BE KEPT IN SIGHT

The primary objective of Superfund, which we fear is in danger of being relegated to a lesser priority, is the mitigation of threats to public health and the environment arising from problem hazardous waste sites. While estimates may differ as to the number of such sites requiring remedial action, eventually all such sites will be identified and remedied. If the law governing current waste management practices, the Resource Conservation and Recovery Act (RCRA), is effectively administered and enforced, no new Superfund sites should be created. Once all problem sites are remedied, Superfund can and should go out of business.

THE SIZE OF THE FUND

LAST YEAR'S HEARINGS

Some eight months ago this Committee held two days of hearings on proposals to extend the Superfund program for five years. The week prior to those hearings, the Senate Environment Committee ordered reported S. 2892, which would have expanded program responsibilities to a cost of roughly $7.5 billion over five years. As then Chairman Dole noted, while "I know of no real opposition (to extending the program or increasing the size of the funding) there are some very important questions to answer: how much does the program need, how much can it spend efficiently . . ."

Almost all those who testified at those hearings, including Lee M. Thomas (then EPA Assistant Administrator for Solid Waste and Emergency Response and recently confirmed Administrator), expressed unequivocal support for the Superfund program. Equally unequivocal was their concern that by either overfunding the program, or by adding provisions -- no matter how well-intentioned -- irrelevant to the Act's principal objective of cleaning up abandoned or uncontrolled hazardous waste sites, Congress ran the serious risk of substantially hampering a program that had finally begun to work.

William Ruckelshaus, EPA Administrator at that time, perhaps most eloquently stated these concerns in his testimony before a House Subcommittee on March 15, 1984. He warned that "additional infusions" of funding beyond EPA's capabilities "could have the paradoxical effect of retarding our activities, not speeding them up." He outlined several factors limiting EPA'a ability to perform at a greatly expanded pace, including physical and administrative constraints facing the federal and state governments in performing remedial investigations and feasibility studies; the need for site assessments to be performed in varying seasons of the year; critical manpower and physical plant shortages within the analytical laboratory industry; and the need for informed citizen participation. He warned that "additional infusions" of money at too great a rate had the potential for promoting fiscal waste.

In his testimony before this Committee last year, Administrator Thomas expressed similar concern about building in waste. He said, "the Superfund program is, in many ways, a construction program. Unless every aspect -- be it planning, design or construction -- is undertaken by the best qualified professionals that you can find, your buildings will become part of this nation's hazardous waste problem."

THE COMMITTEE'S CURRENT CONSIDERATION

In line with its recommendations concerning the level of funding it could administer effectively, EPA requested a $5.3 billion reauthorization over a five year period. Nonetheless, the Senate Environment Committee reported legislation reauthorizing Superfund at a level of $7.5 billion over a five year period (S.51). Various other current proposals suggest funding levels up to $12 billion.

We believe that the reservations about excessive funding, expressed by EPA and many others, have continued application today. In fact, recent events may have exacerbated these problems.

Please let me explain.

First, while we all want hazardous waste sites to be remedied as quickly as possible, we are equally concerned that remedial actions be well-planned and well-executed. The objective has got to be quality clean-up.

Prior to 1981, EPA was a novice in the field of cleaning up toxic waste sites. Early experiences with Superfund demonstrated that notwithstanding the expenditure of massive sums of money, in several instances acutely toxic wastes were simply transported by government vehicle from one leaking waste site to another. EPA has since learned the ropes, often through trial and error, as well as the serious consequences that could result from a less than professional clean-up or adequate disposal of the removed wastes.

Unfortunately, EPA's current level of activity is already taxing the limits of that professionalism. By the end of fiscal year 1990, emergency removal actions at over 1700 sites will have been undertaken. Long-term cleanup work is underway at 134 of theses sites while EPA is conducting engineering studies at 317 sites. The agency estimates that the NPL could grow between 1,500-2,500 sites. By the end of fiscal year 1990, EPA projects that engineering studies, the first phase in the full cleanup of a priority site, will have been started at nearly 1,500 sites.

While we had serious doubts last year about the EPA's ability to effectively and efficiently spend $7.5 billion over five years, the requirements imposed on the Agency by the recently enacted amendments to RCRA leave no doubt that EPA will not be able to handle any funding in excess of annual $1 billion it has requested. There simply aren't enough research labs, experienced personnel or adequate disposal and treatment facilities to go around.

Let me provide some illustrations of the kinds of constraints which EPA itself has noted:

- Technical staff. One of the greatest constraints to a rapidly increased Superfund program appears to be the lack of available technical staff, especially EPA project managers and personnel with expertise in groundwater hydrology.
- Lab Capacity. The Superfund program is straining the capacity of laboratories because of the amount and type of analysis required.
- Safe Disposal Sites. The lack of safe disposal sites has hampered the progress of the Superfund program. The interim report to the House Appropriations Committee found that many states' geological structures are not conducive to the construction of hazardous waste landfills. In addition, public concern has limited the construction of hazardous waste landfills and has produced a growing reluctance by some jurisdictions to accept hazardous waste from other states or regions.

- Professional Site Studies. Each site and situation is different, resulting in different problems. As a result, each site requires unique engineering and construction plans.

These shortfalls, which impose substantial restrictions on the efficient use of Superfund money, will be increased dramatically by the new efforts under RCRA. The serious health and safety concerns that could flow from too much funding must be carefully reviewed by Congress.

We fear that the pressure of available funds will likely produce a tendency to spend, rather than to spend wisely. Fueled by a much larger pool of available funds and the expectation of recovery from industry under § 107 of the Act, EPA will have less incentive to maximize efficiency or quality.

It may also create new problems. The lack of adequate treatment capacity leads to land disposal, with the result that the contaminated wastes are again simply moved from site to site. This is no solution, and in fact perpetuates the precise problem by creating further opportunity for spills and releases. When Congress amended RCRA in 1984, it banned land disposal under most circumstances to prevent future problems. This will produce competition among current generators and site clean-ups for alternative treatment. The inability of current capacity to handle RCRA-waste quantities and heightened Superfund cleanup will increase land disposal because, as permitted by RCRA, generators will be able to show the inability to obtain alternative means of treatment. More land disposal means more chances for future contamination.

The devotion of EPA resources necessary to perform its RCRA tasks under the prescribed schedules -- which must be met if certain legislative hammers (like a complete ban on land disposal) are to be avoided -- is already expected to strain the Agency's technical staff. There is concern that Superfund cleanup will be relegated to secondary contractors whose inexperience may be counterproductive. For example, EPA has announced that if companies wish to contract with EPA for site cleanup, they will be prohibited from private contracts. The diminishment of skilled resources raises serious questions about the efficiency and ultimate success of all remedial efforts (both public and private). NAM therefore recommends that the Fund be set at an amount that EPA can efficiently manage. EPA itself recommends a maximum level of $1 billion annually.

II. NAM OPPOSES INCLUSION OF A VICTIMS ASSISTANCE OR COMPENSATION PROVISION IN SUPERFUND

The bill reported by the Senate Environment and Public Works Committee, S.51, contains in Section 129 an entirely new Federal program to provide medical insurance, benefits and related costs to individuals who may have been exposed to a hazardous substance and release. This provision is of considerable concern to NAM.

Section 129 provides for grants of not less than $1 million nor more than $10 million each for five to ten demonstration "areas", together the grants may not exceed $30 million each year for fiscal years 1986 and 1987. Funding for the program comes from general revenues. Eligibility as "demonstration area" requires that individuals have been exposed "to a hazardous substance and release," and the Agency for Toxic Substances and Disease Registry (established under Sec. 104(i) of CERCLA) has completed a study showing the possibility that the area's population is at significant risk of disease or injury.

The program to be established by Section 129 provides medical screening, examinations and tests; if no symptoms have developed from "the exposure" a medical benefits insurance policy will provide costs for medical screening, testing and examination. If symptoms exist or develop, out-of-pocket medical costs are reimbursed. The bill also provides for group medical benefits, insurance policy, hospitalization, medical and surgical, subject to an annual deductible of $500.

This proposal warrants careful scrutiny by the Committee because it would establish an entirely new right to compensation from the federal government. It raises a number of broad scientific, social, economic and legal issues that deserve careful consideration, and which should not simply be "tacked-on" to the Superfund cleanup program.

Moreover, this program is likely to seriously drain the funds available for hazardous waste cleanup. Experience with other such compensation schemes -- such as the Black Lung Program -- reveals that once a right to compensation is established, albeit on a limited scale, it is virtually impossible to resist the pressure to expand the program. Thus, in the midst of its consideration of huge budget deficits, it can conservatively be said that Sec. 129 could soon cost a whopping $2.5 billion per year. It can also be said that such funds will not be used for the cleanup of hazardous waste.

In light of the deficit, it is especially ironic that such a novel and massive expenditure of federal funds would be proposed without a clearly demonstrated need.

The United States already devotes an enormous amount of resources to persons requiring medical evaluation, medical care or compensation for injury, disease or death from almost any cause. This "safety net" has taken decades to construct and consists of a vast array of remedies, including such diverse elements as insurance coverage,[1] worker's compensation, tort liability, no-fault administrative remedies and publicly financed programs (e.g., Medicaid and Medicare). Unless and until that "safety net" is shown to be insufficient the expenditure of millions, if not billions, of dollars on a demonstration program simply cannot be justified.

The demonstration program also raises serious questions as to its scope. Although the program is authorized at $30 million per year, there are numerous factors to indicate it would be virtually impossible to limit the program to that level. For example, once citizens receive benefits and/or free insurance coverage, it will be difficult, if not impossible to turn these benefits and/or insurance off after two (or five) years. As the amendment does not link coverage to exposure of a hazardous substance at a waste site, millions of people who were exposed to "hazardous substances" in their homes, schools, etc. would likely seek coverage.

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[1] Insurance industry data reveals that approximately 90% of American families have some form of health insurance coverage.

Further, the political pressure to expand the program will be tremendous, regardless of the program's merit. As one report has noted, previous experience with compensation funds show that costs have escalated far beyond initial intent. For example, the Black Lung Program was established in 1969 to compensate coal miners for a single disease (black lung) related to coal dust exposure. The program was originally designed as a "one-shot" program to terminate in 1976 at an estimated total cost of $350 million. Subsequent amendments expanded jurisdiction, increased the number of illnesses covered and made the program permanent. By 1981 the black lung program was paying benefits to some 460,000 individuals, more than twice the number of coal miners employed at that time. In addition, by 1981 beneficiaries had received $11.5 billion in benefits, more than 30 times the initial cost projection. Similarly, the Longshoreman's and Harbor Workers' fund, amended 10 times, grew from $43 million to $355 million -- a 726 percent increase from 1972 to 1982.

Finally, just as it is never clearly stated what the program is intended to demonstrate, there is a complete lack of specificity with regard to the criteria by which the utility and effectiveness of the demonstration program will be judged. This in itself indicates that it is viewed as the launching of a far larger and perpetual entitlements program.

Perhaps most importantly, the demonstration program will divert the focus of Superfund. The primary purpose of CERCLA is to assure the cleanup of abandoned or uncontrolled hazardous waste sites that threaten public safety and the environment. If Congress desires to create a medical assistance program for individuals exposed to hazardous substances -- whether or not associated with a site -- the fiscal ramifications of this proposal require that the issue be considered separately and thoroughly. Indeed, as Administrator Thomas emphasized in his testimony to this Committee last September:

> "The notion of compensating a portion of one class of people who may have been harmed through no fault of their own and not compensating the rest of that class (not to mention other classes) raises serious questions of social equity. The threshold question whom we compensate and who deserves the closest scrutiny by Congress beyond the current debate over Superfund reauthorization."

In seconding the concern of Administrator Thomas, NAM respectfully urges that this Committee not, in the context of its consideration of Superfund, fund an entirely new federal program that will divert significant resources from the cleanup of the Nation's hazardous waste sites and that could easily lead to a national health care program far beyond the intent of the original provision.

CONCLUSION

Thus, NAM respectfully urges that this distinguished Committee not provide any funding whatsoever for Section 129. We also urge that the authorization under Section 140(b) of S.51 be amended to substitute $5,000,000,000 for $7,500,000,000 for the five fiscal-year period beginning October 1, 1985.

Senator Packwood. Let me ask you both the same question. You have heard the discussion this morning on the feedstock versus the waste end versus the broadbased tax of some kind. In each case, what is your preference? Both the Chamber and the NAM.

Dr. Alter. Our members of the various committees have debated this, and as of now they have come to no resolution. We have no position. The point debated are similar to what has been said today.

Senator Packwood. Mr. Wallach?

Mr. Wallach. Mr. Chairman, I think the NAM's response would be effectively the same. As I understand it, the board of NAM will again be considering this issue in great depth at its next meeting. I can't say whether they will come to a recommendation or not, though.

Senator Packwood. It would be a great help to us, because my hunch is that we are going to go beyond the administration's level of recommendation and move much closer toward the Environment Committee's recommendation. And if we start going that whole route with the feedstock tax or a very heavy waste-end tax, my hunch is you both have lots of members that would be relatively adversely affected. In fact, you may be, just at the present level. And it would be a help to us if both of your organizations had a position.

Dr. Alter. Senator, I would also suggest that the more you move away from the EPA level, the larger the disagreement is likely to come.

Senator Packwood. The larger the what?

Dr. Alter. The larger the disagreement among sectors of industry. The more you move away from the $5.3 billion and go up to whatever number, means the more money that has to be collected; the more diverse the methods likely to be applied, the more people who will be sitting in front of you and objecting. That is the sort of problem we have run into.

Senator Packwood. Maybe. My experience has been almost just the opposite, though. If you have a very broad based generic low tax, it doesn't stir overwhelming opposition. If we try to fund that entire $7.5 or $6.5 or $5.5 billion with the feedstock tax, as the administration suggested, the worse of the alternatives, that will generate immense specific opposition.

Dr. Alter. It may also generate a lot of specific support from those who say, "You missed me this time."

Senator Packwood. No, that is not my experience. [Laughter.]

They may be happy that they are missed, but they won't come in and go "phew, thank you; go ahead and load it onto the oil companies." They will say nothing, and the opposition will be immense from those who are adversely affected, and I think a fair number of economists will say this is devastating to our trade position, also.

Gentlemen, thank you very much. I appreciate it.

Now if we can have A. Blakeman Early, representing the Sierra Club, and Martha Broad, representing the Natural Resource Defense Council.

Go right ahead, Mr. Early.

STATEMENT OF A. BLAKEMAN EARLY, WASHINGTON REPRESENTATIVE OF THE SIERRA CLUB, WASHINGTON, DC

Mr. EARLY. Thank you, Mr. Chairman. It is a pleasure to be here this afternoon to testify before the committee.

My testimony is also submitted not only on behalf of the Sierra Club but Congress Watch, National Audubon Society, and the U.S. Public Interest Research Group.

The current Superfund, we believe, Mr. Chairman, must be greatly expanded. It is clear that the number of sites needing cleanup is enormous, and EPA progress is wholely inadequate.

Estimates of the cost of the program have increased while the Reagan administration proposes to continue the program essentially at its current pace. But it is quite clear that the current pace of the program as well as the goals are inadequate.

Mr. Chairman, I would like to submit for the record a new report which will not be actually released until tomorrow that documents just how inadequate the cleanup progress under the current program has been. This report, prepared by the National Campaign Against Toxic Hazards, found that 90 percent of the National Priority List sites will not receive long-term cleanup moneys during the 5-year life of the current program.

In 1985, only 29 sites will receive long-term cleanup funding.

As soon as that is available, I would like to submit it for the record, Mr. Chairman.

Senator PACKWOOD. It will be in the record.

[The report not available at press time.]

Mr. EARLY. We support a level of funding that would enable the type of cleanup effort that would address many more sites in a much shorter time. Under the Reagan program, it may take as long as 30 years to address the most serious sites. And, Mr. Chairman, this is why we support H.R. 2022, the Sakorsky bill that was recently introduced, which would raise and spend approximately $11.7 billion over the next 5 years.

Obviously, should the Finance Committee choose to fund a program at less than $7.5 billion authorized in the Senate Environment Committee bill or the Bradley bill, it is opting for the steady-State approach recommended by the Reagan administration, and in my view this will greatly disappoint the American public.

Turning to the various means of raising taxes, Mr. Chairman, we believe that the bulk of the funds should be raised, continue to be raised, from the existing feedstock taxes, but at a higher rate.

The chemical industry is currently one of the least taxed industrial sectors in the country. We have not seen any evidence to indicate that increasing feedstock rates on the order of what the House passed last year will adversely affect the industry. All evidence indicates that the profitability of these industries remains strong.

Nevertheless, Mr. Chairman, we recommend that the committee examine the possibility of devising a tax on imported intermediate chemicals to offset any possible impact that imports might be stimulated by the increase of the feedstock tax.

We are very concerned about efforts to shift a substantial portion of the revenue-raising burden to a broad based corporate tax. Not only does this depart very widely from the pollute-or-pay principle, but the committee may find that such a tax ultimately is unacceptable to the Congress, and the result may be a very small Superfund or no Superfund at all.

Similarly, we are concerned with shifts to a waste-end tax which would create a system that is much less reliable from a revenue standpoint and much more administratively complex.

We are especially concerned about shifting to a waste-end system that has rates that may shift waste management activities to undesirable forms of waste management such as deep-well injection.

There are many unanswered questions about deep-well, which leads us to conclude that any tax system should not favor this management system.

In our view, the committee should not expect to raise more than $300 million from waste-end taxes if it adopts such a system.

Let me point out, Mr. Chairman, that on page 3 of my testimony at the very bottom there is omission of two words which would need to be added to make the point, at the bottom of the page and at the top of page 4.

Senator Packwood. Excuse me. On the copy I have, the pages are not numbered.

Mr. Early. It would be at the bottom of the paragraph entitled "The Waste-End Tax Should Not be Made a Major Revenue Source," the last line. There are two words missing. It should be "more than" to make the point in that sentence. We don't support a waste tax that endeavors to raise "more than" $300 million a year.

Senator Packwood. All right. Thank you.

Mr. Early. Finally, Mr. Chairman, we oppose the continuation of the Post-Closure Liability Fund that is in the current law. We believe that the current Post-Closure Liability Fund Program fails to achieve the important goals of maximizing the care used by active waste management site owners and providing a means for cleaning up leaking wastes that are abandoned at some point way in the future.

We do recommend that we return to this issue and design a system that would accomplish those goals at a later time.

That concludes my testimony, Mr. Chairman. Again, thank you for giving me the opportunity to appear today.

Senator Packwood. Thank you. Ms. Broad?

[Mr. Early's written testimony follows:]

TESTIMONY OF A. BLAKEMAN EARLY

SIERRA CLUB WASHINGTON REPRESENTATIVE

BEFORE THE

SENATE COMMITTEE ON FINANCE

ON SUPERFUND LEGISLATION

ON BEHALF OF

CONGRESS WATCH

NATIONAL AUDUBON SOCIETY

U.S. PUBLIC INTEREST RESEARCH GROUP

April 25, 1985

My name is A. Blakeman Early. I am Washington Representative of the Sierra Club. I appreciate the opportunity to testify before the Committee on Finance.

THE MAGNITUDE OF THE SUPERFUND PROBLEM IS MUCH GREATER THAN WE THOUGHT

I will not dwell as long as I should on the scope of Superfund problems but quite clearly the estimates of the cost and scope of the problem are increasing at the same time that the Reagan Administration is attempting to reduce the level of commitment to the program. The Reagan bill is esentially designed to maintain the level of cleanup effort at current levels. This is unacceptable. We believe that recent reports only emphasize the need to expand the size of the Superfund program. This is clearly what the American public is demanding. The Office of Technology Assessment has increased its assessment of the total cost of hazardous substance release cleanups from $40 billion to $100 billion. The General Accounting Office has increased its worst case estimate from $26 billion to $39 billion. This figure would cover the capital cost of cleaning-up approximately 4,000 priority sites. Of course, a survey of state hazardous waste officials found that as many as 7,000 sites may need assistance.

We support a bill recently introduced by Representative Jerry Sikorski, H.R. 2022 that would greatly expand the number of sites and how quickly such sites are cleaned up. It would raise $11.7 billion over five years. Obviously, such a program would be far larger than that proposed by the Reagan administration or the modest increases provided in the bill reported by the Senate Environment Committee, S. 51.

THE FEEDSTOCK TAX SHOULD REMAIN THE PRINCIPAL REVENUE SOURCE

We believe that the oil and chemical feedstock tax should continue to be the principal source of funding for Superfund. We also believe that this can be achieved without a significant adverse impact on the oil and chemical industries. The passage of H.R. 5640 by the Ways and

Means Committee with rates that tripled on average the feedstock taxes in present law indicates that the Ways and Means Committee, too, believed little significant adverse impact would be felt.

Consider the following facts. First, the chemical industry is not a very heavily taxed industry. Indeed, according to a study by the Joint Tax Committee, in 1983 the chemical industry had the lowest U.S. effective tax rate among 18 industries studied.

Second, all legislative proposals have contained a cap on the total tax rate to ensure that rates will not exceed be too onerous. In H.R. 2022, 3 percent of the retail value of each chemical feedstock taxed.

Third, a study sponsored by ARCO, Inc. of the impact of rates in H.R 5640 found the impact to create only a 2 percent reduction in production, well within the margin of error for such econometric studies.(See Attachment 1) The study did not even take into account subsequent changes made in the House-passed version of H.R. 5640 that excluded exported feedstocks from the tax. The Arco study found that the empact of the increased tax on sales price of the stucied substances to be no more than 2% for feedstock chemicals and .5% for their derivatives.

Fourth, an increased tax on crude oil, even at $0.15 per barrel,``` represents only a .006 percent increase in price of a barrel of crude oil, a cost that clearly can be passed on to crude oil consumers.

Fifth, the profitability of the companies currently contributing approximately 70% of the feedstock tax remains high. (See Attachment 2).

We do strongly support the passage of effective provisions to tax, at a comparable rate to the feedstock rate, imported intermediate chemicals which are derived from taxable feedstocks. These chemicals would escape taxation under current law. Clearly, it is important to close this loophole, in order to preserve the competitive position of domestically produced chemicals in the U.S. marketplace.

OTHER REVENUE SCHEMES MUST BE RELIABLE

We are very concerned about efforts to shift the tax to other forms of taxation. It must be demonstrated that these tax proposals are administerable, reliable, and politically feasible. For instance, shifting the tax to a net receipts tax on all corporations both departs from the "polluters pay" principle because it taxes industries that have had nothing to do with the use or handling of hazardous substances. Obviously, these industries will fight to avoid shouldering the Superfund burden. They may even work to minimize the size and scope of the Superfund program, which would be an unfortunate outcome. It would be a major tragedy for the Committee to shift from the feedstock approach to a broad-based corporate tax approach only to have such provisions cause defeat of the superfund legislation.

We can not pretend to be tax experts and evaluate every possible variation of a broad-based corporate tax dedicated to Superfund. Quite clearly, though, approaches such as proposed by Senator Bentsen in S. 957 raise concerns about creating a large administrative burden by taxing a very large number of tax payers. We will support any reasonable tax that will reliably provide funds needed to greatly expand the current Superfund program as is provided in H.R. 2022. But we can not support a new tax approach that is politically unreliable , yet fails to create a much larger program.

THE WASTE-END TAX SHOULD NOT BE MADE A MAJOR REVENUE SOURCE

A shift to the waste-end tax would substitute a much less reliable tax scheme for the highly reliable one in current law, because we cannot accurately assess the amounts of waste currently generated. For example, the most recent survey done for EPA provides an estimate that is only accurate within + or - 50 percent, with a degree of confidence of 95 percent. We therefore do not consider it wise to shift in a major way to an unpredictable tax base. We do not believe that revenues of approximately $300 million can be dependably raised thorugh a waste-end approach.

Proposals to shift to the waste-end tax really do not shift the tax burden away from the chemical industry. As I noted above, the chemical industry generates 86 percent of hazardous waste currently regulated. This fundamental fact is reinforced by a CMA analysis of the Administration bill's waste-end tax. It found that two companies pay over 50 percent of the tax, six companies pay over 76 percent of the tax, and thirteen companies would pay over 90 percent of the tax.

In addition, the waste-end tax is only applicable to wastes which EPA identifies in accordance with RCRA. EPA has been under tremendous pressure to de-list wastes it has already identified and minimize the number of additional wastes it adds to the hazardous list. This pressure sparked the passage of provisions in the RCRA amendments passed last year which require EPA to more aggressively list wastes and to narrow EPA's ability to de-list hazardous wastes without public review. An imposition of a waste-end tax merely adds a new set of financial stakes to the regulatory stakes associated with the listing or de-listing decision. Thus, the waste-end tax and the RCRA amendments work against each other.

Finally, we will not support waste-end proposals, such as those in the Reagan and Bradley bills, provide rates that favor deep-well injection. It is paramount that waste-end tax rates not encourage the use of any particular management technique. Favorable rates for deep-well injection could result in the encouragement of a new generation of underground Superfund sites. As my colleague Ms. Braod will describe in detail, we levieve that the safety issues associated with deep-well injection have not been satisfacotrily examined or answered. Deep-well injection poses health and environmental threats because of our limited knowledge of the impact of waste's movement under pressure in the undergournd strata, our concerns regarding the adequacy of regulation, and the fact that once wastes have ben injected, they are impossible to recover. In S. 596, the $50 dry weight alternative tax is calculated on the assumption that 6% of the volume of deep-well disposed wastes are in fact hazardous, thus providing what the Chemcial Manufacturers Association contend is a "fair" share of the revenue. However, a recent survey conducted for CMA indicates that undergound injection wastes may contain only 4%solids, thus substanially decreasing the revenue contribution from this activity. It is by no means clear that the "wet weight" rates in S. 596 do not also favor deep-well disposal, when the cost of disposal is taken into account.

The Bradley bill also does not tax hazardous wastes that are treated as part of a wastewater treatment system. We have serious concerns that such a scheme might promote the additional use of such systems which are by no means free of impact on health and the environment. Industrial wastewater systems typically use impoundments, the majority of which are unlined, which clearly can cause serious contamination problems. For this reason the approach found in the Mitchell-Chafee bill, S. 955, avoids the problem of creating a favorable incentive to use wastewater treatment in lieu of other management options.

Should the Finance Committee choose to adopt a waste-end revenue proposal, we urge it to choose one the focuses on raising revenue and which does not create biases in favor of a waste maagement option we may later regret.

THE POST-CLOSURE LIABILITY FUND SHOULD BE ELIMINATED

The Post-Closure Liability Fund (PCLF) was enacted as part of Superfund in 1980 without any serious debate or discussion. The House was forced to accept the Senate provisions as part of a compromise package enacted during the lame-duck session. The original concept was to provide a source of funds for cleanup and damages arising from leaks which occur from sites that have already closed and the owner has disappeared or is insolvent. The PCLF relieves site owners—who may in fact be solvent and available—from liability five years after the site is closed. In the site owner's place is a fund which in all likelihood is far too small to cover all potential liabilities. We believe that those who may be exposed to hazardous substances which have leaked from closed sites many years hence are worse off under th PCLF program than they are under existing law. Here are a few of the flaws in the PCLF program:

1) EPA's regulations are currently inadequate. They provide little assurance that sites will not leak after closure. The transfer of liability from the owner to the PCLF eliminates the best incentive the owner has to manage wastes more safely than EPA requires.

2) It is impossible to determine how many sites will ultimately leak and the amount of cleanup and compensation funds that will be needed. To the extent that the PCLF is under-funded, land disposal, the least desirable option, is subsidized relative to more desirable alternatives.

3) Although all sites will contribute to the PCLF, only those that do not leak within five years of closure can transfer liability. Those that do leak within five years and do not qualify to use the PCLF have had needed funds diverted to sites which may not pose problems for many years. Where do the victims of these sites turn?

4) States will be delegated supervision of closure operations. Yet these states will bear no responsibility for letting an inadequate site transfer liability to the PCLF. Indeed, they may have an incentive to transfer liability for as many sites as possible to avoid paying for future cleanups using out-of-state funds.

The PCLF program is fatally flawed. We urge the Committee to let it die. Currently operating sites will not qualify for some time, because EPA has issued few final permits. If the Committee feels compelled to revisit the issue in the future, it could do so without the burden of an existing "lame duck" program.

ATTACHMENT 1 - A

EXHIBIT C.4

OUTPUT OF THE PETROCHEMICAL TRADE MODEL

PETROCHEMICAL TRADE MODEL

	PROPYLENE		POLYPROPYLENE	
	U. S.	Rest of W.	U. S.	Rest of W.
EXISTING TAX RATE				
Tax Rate	$4.87	$0	$0	$0
Price	$494	$503	$803	$862
Production	5788	10280	1577	3021
Imports			3	367
Exports			367	3
Consumption	5788	10280	1213	3385
Sales (net)	$2,828		$1,267	
Tax Revenue	$31		$0	
NEW TAX RATE				
Tax Rate	$13.82	$0	$0	$0
Price	$499	$504	$807	$863
Production	5652	10395	1540	3054
Imports			15	344
Exports			344	15
Consumption	5652	10395	1211	3383
Sales (net)	$2,734		$1,244	
Tax Revenue	$86		$0	
PERCENTAGE CHANGES				
Price	1%	0.2%	0.5%	0.2%
Production	-2%	1%	-2%	1%
Imports			421%	-6%
Exports			-6%	421%
Consumption	-2%	1%	-0.2%	-0.1%
SALES DECREASE	$95		$23	
TAX REV INCREASE	$55		$0	

Note: Quantities are in thousands of metric tons (2204.6 lbs), and prices are in dollars per metric ton. Tax rates are entered in dollars per English ton (2000 lbs.) and converted to dollars per metric ton for use in the model. Sales and tax revenues are in millions of dollars.

This table shows the effects of the tax rate proposed by H.R. 5640 ($13.82) on production, imports, and exports of propylene and polypropylene, compared with the existing tax rate.

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ATTACHMENT 1 - B

EXHIBIT C.4 (CONT.)

OUTPUT OF THE PETROCHEMICAL TRADE MODEL

PETROCHEMICAL TRADE MODEL

	BENZENE		STYRENE	
	U. S.	Rest of W.	U. S.	Rest of W.
EXISTING TAX RATE				
Tax Rate	$4.87	$0	$0	$0
Price	$460	$460	$648	$716
Production	3571	11445	2893	4884
Imports	448	28	12	465
Exports	28	448	465	12
Consumption	3991	11025	2440	5337
Sales (net)	$1.424		$1.873	
Tax Revenue	$19		$0	
NEW TAX RATE				
Tax rate	$14.88	$0	$0	$0
Price	$469	$461	$657	$717
Production	3518	11561	2790	4975
Imports	351	20	54	413
Exports	20	351	413	54
Consumption	3849	11230	2430	5335
Sales (net)	$1.592		$1.832	
Tax Revenue	$58		$0	
PERCENTAGE CHANGES				
Price	2%	0.2%	1%	0.1%
Production	-1%	1%	-4%	2%
Imports	-22%	-27%	347%	-11%
Exports	-27%	-22%	-11%	347%
Consumption	-4%	2%	-0.4%	-0.04%
SALES DECREASE	$32		$41	
TAX REV INCREASE	$39		$0	

Note: Quantities are in thousands of metric tons (2204.6 lbs). and prices are in dollars per metric ton. Tax rates are entered in dollars per Enelsih ton (2000 lbs.) and converted to dollars per metric ton for use in the model. Sales and tax revenues are in millions of dollars.

This table shows the effects of the tax rate proposed by H.R. 5640 ($14.88) on production, imports, and exports of benzene and styrene, compared with the existing tax rate.

ATTACHMENT 2

Many arguments are made against expanding the Superfund feedstock tax because of the negative impact doing so would have on companies currently contributing through that tax. The following table lists the tax rate from 1981 through 1983 for the companies now paying approximately 70% of the petrochemical feedstock tax.

Company	Tax Rate 1981-1983	Profit 1981-1983
Amoco	16.8%	$5.5 billion
Arco	18.7%	$7.3 billion
Dow Chemical	-28.7%	$776 million
Exxon (Chemical)[1]	27.5%	$9.4 billion
Gulf	10.7%	$2.5 billion
Mobil	13.1%	$3.1 billion
Sun	16.8%	$2.96 billion
Shell	26.7%	$8.1 billion
Texaco	- 3.4%	$1.7 billion
Union Carbide	-11.4%	$613 million
Dupont/Conoco[2]	- 5.1%	$2.6 billion

1. Tax rate and profit figures are for Exxon Corporation as a whole
2. Tax rate and profit figures are for Dupont, of which Conoco is now a subsidiary

Source for tax rate and profit data: Corporate Income Taxes in the Reagan Years,: Citizens for Tax Justice, October 1984.

STATEMENT OF MARTHA BROAD, RESOURCE SPECIALIST, NATURAL RESOURCES DEFENSE COUNCIL, INC., WASHINGTON, DC

Ms. Broad. Thank you.

My name is Martha Broad. I am a resource specialist with the Natural Resources Defense Council, Wendy Gordon, a science associate in our New York office also contributed to the statement that I will present today.

We appreciate this opportunity to share our views on the type of funding mechanisms which should be incorporated into a reauthorized Superfund Program.

This committee must soon make some critical decisions regarding how much funding the Nation's hazardous waste cleanup program will receive and through what taxing mechanisms these funds should be delivered.

It is our position that the Superfund Program should be enlarged to at least $11.7 billion over the next 5 years.

The funding of the program is in effect the horse that pulls the Superfund cart. A high level of funding can enable the program to move forward quickly and efficiently. According to EPA's own estimates, an $11.7 billion Superfund will be needed to address a list of 1,800 NPL sites, and more recent GAO and OTA estimates go much higher.

In addition, whatever funding mechanisms are adopted must be proven predictable and stable. The current feedstocks tax has thus far proven to be reliable and easily administered.

A number of proposals in the House and Senate reduce, in varying degrees, our reliance on a feedstock tax and add a waste-end tax on the generation, treatment, storage, or disposal of wastes.

NRDC in the past has expressed its concern that a waste-end tax may pose a number of problems. According to EPA's 301 Report, no model exists to precisely estimate a waste generator's potential response to a tax on the generation of hazardous wastes, although a model does exist in relation to a feedstock tax. In addition, no model has been developed to predict the ability of a waste-end tax to achieve its revenue target.

However, despite the complexities of devising a workable taxing scheme, the lack of necessary data, and the record of shortcomings in existing tax systems, if this Congress does decide to enact some form of a waste-end tax, we strongly urge that:

First of all, a flat tax on the various disposal methods be adopted at this time which does not encourage underground injection of wastes;

Second of all, no more than 10 percent of revenues be derived from a waste-end tax;

And third, a wet weight rather than a dry weight be used as the unit of taxation under a waste-end taxing scheme.

NRDC strongly opposes adoption of waste-end proposals which incorporate a type of degree of hazard tax on disposal methods—meaning that taxing underground injection at a lower rate, as has been proposed in both the House and the Senate, we believe would be ill-advised at this time, for several reasons:

First of all, considerable uncertainty surrounds the potential for injected hazardous wastes to be adequately isolated in the subsurface strata into which they are injected and intended to remain;

Second, considerable quantities of hazardous wastes are already being disposed by this method. Sixty percent of all wastes are disposed through injection;

Third, it is a method that is far less regulated than any other hazardous waste disposal method and, as a consequence, far cheaper;

Last, some wastes streams are likely to be shifted from one inadequate land-disposal method to another, instead of being treated and rendered nonhazardous or being destroyed in an environmentally safe fashion. This behavior undermines what seems to be the principal goal of the waste-end tax, which is to encourage the proper treatment of our wastes.

NRDC therefore recommends that, if a waste-end tax is adopted, that it be based on a flat-tax scheme that does not attempt to differentiate between disposal methods based on their degree of hazard. According to agency analysis, the flat-tax scheme shows some promise in being able to generate reliable revenues.

We also urge that if adopted, a waste-end tax should not be relied on for more than a small portion of the total revenues intended to be generated. No more than 10 percent of revenues should be raised by waste-end taxes.

Finally, NRDC urges that, if a waste-end tax is adopted, a wet weight rather than a dry weight be used as the unit of taxation. As EPA has found, a dry weight may be more difficult to administer than a wet-weight tax and, moreover, it is less reliable and provides the opportunity for waste manipulation for the purposes of tax reduction or avoidance. And in addition, a dry-weight taxing mechanism is likely to have adverse environmental effects by further encouraging underground injection, a disposal method which, as noted previously, involves serious unanswered questions regarding future damage of ground water.

Thank you, Mr. Chairman.

[Ms. Broad's written testimony follows:]

Natural Resources Defense Council, Inc.

122 EAST 42ND STREET
NEW YORK, N.Y. 10168
212 949-0049

Western Office
25 KEARNY STREET
SAN FRANCISCO, CALIF. 94108
415 421-6561

Washington Office
1350 NEW YORK AVENUE, N.W.
SUITE 300
WASHINGTON, D.C. 20005
202 783-7800

STATEMENT OF THE
NATURAL RESOURCES DEFENSE COUNCIL
ON
SUPERFUND FINANCING MECHANISMS
BEFORE THE
SENATE FINANCE COMMITTEE

Martha Broad
Resource Specialist

Wendy Gordon
Science Associate

April 26, 1985

New England Office: 850 BOSTON POST ROAD • SUDBURY, MA. 01776 • 617 237-0472
Public Lands Institute: 1720 RACE STREET • DENVER, CO. 80206 • 303 377-9740

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This testimony is presented on behalf of the Natural Resources Defense Council, Inc. (NRDC), a non-profit environmental organization with over 45,000 members working to protect human health and the environment from the hazards posed by toxic subtances released into the air, land and water. We appreciate this opportunity to present our views on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act ("Superfund"), particularly with regard to funding mechanisms.

Reauthorization of Superfund, the hazardous waste site cleanup law, is one of NRDC's top priorities this year, and we look forward to working with Congress towards strengthened legislation in the coming months. Of principal concern is that the Superfund program receive adequate funds generated using a reliable funding mechanism. These are the tools with which Superfund is to achieve its primary goal, that of responding to the need for clean up at the thousands of sites that presently or may in the future blight our environment and threaten public health. Any proposals that could compromise an adequate and fully reliable funding base should not be seriously considered.

The Superfund Program Should Be Enlarged To At Least $11.7 Billion Over the Next Five Years

In four and a half years, EPA has spent almost $1.6 billion to clean up only six sites. It is clear that a much larger Superfund is required to effectively address the hundreds of sites on the Agency's proposed National Priorities List (NPL).

Last December, EPA issued the "301 Report," mandated by Congress. According to the Agency's own estimates, an $11.7 billion Superfund will be needed to address a list of 1,800 NPL sites.[1] More recent estimates go much higher. The General Accounting Office (GAO) now estimates that the number of priority sites could grow to over 4,000 and that the federal cleanup costs could go as high as $39.1 billion.[2] The Office of Technology Assessment (OTA) recently released a study which points out that it could take EPA decades to clean up 10,000 possible priority sites at a cost of $100 billion.[3]

In light of these estimates, a substantial increase over present funding levels is mandatory. We urge that at least $11.7 billion, as estimated by EPA, be allocated to finance cleanup over the next five years.

The Superfund Program Must Raise Both a Predictable and A Reliable Amount of Money

A tax on the "feedstocks," or raw materials used in chemical production, currently generates 87.5% of the cleanup fund. This tax has thus far proven a reliable source of funding, and is easily administered. Moreover, it places the financial burden on those industries that produce the vast majority of substances being found at Superfund sites. A number of proposals in the House and the Senate reduce, in varying degrees, our reliance on the feedstock tax, and add a "waste-end" tax on the generation, treatment, storage or disposal of waste. NRDC has in the past expressed its concern that a waste-end tax is an unreliable mechanism for generating the revenues necessary to finance Superfund cleanup efforts. The experience of states utilizing waste-end taxes, as documented by the GAO[1] and an EPA study,[2] demonstrates that waste-end taxes are difficult to administer, do not generate the revenues anticipated, have not been shown to obtain the objective of encouraging alternative disposal practices, and may in fact increase the incentive to illegally dispose.

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[1] "Section 301(a)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980: A Report to Congress on the Environmental Protection Agency's Experience with Implementing Superfund," U.S. EPA, December 1984, p. 7. Hereinafter cited as "301 Report."

[2] Testimony of Milton J. Socolar, Special Assistant to the Comptroller General, before the Subcommittee on Commerce, Transportation, and Tourism of the House Committee on Energy and Commerce, March 7, 1985.

[3] "Superfund Strategy: Summary," Joel S. Hirschhorn, Project Director, Office of Technology Assessment, March 1985, OTA-ITE-253.

Moreover, establishing a waste-end tax poses a number of problems. One, no model exists to precisely estimate waste generators' potential response to a tax on the generation of hazardous waste, such as exists to predict changes in prices and levels of feedstocks resulting from a feedstock tax.[1] Two, no model has been developed to predict ability of waste-end tax to achieve its revenue target.[2] For either of these models to be developed and yield reliable information, more data needs to be generated on the production and decision-making process that affect the supply of and demand for various products; the sensitivity and elasticity of demand for final products to changes in the prices conditioned by a waste-end tax; the extent to which a waste-end tax would fall on the same industries as the feedstock tax; and the degree to which a waste-end tax would create incentives to reduce overall volume of waste generated.[3]

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[1] General Accounting Office, State Experience With Taxes on Generators or Disposers of Hazardous Wastes, GAO/RCED-84-146, May 4, 1984.

[2] U.S. Environmental Protection Agency, A Survey of State Experiences With Waste End Taxes, Office of Policy Analysis. Washington, D.C., September 1984. Hereinafter cited as "State Superfund Report."

The financing mechanism in the present law has worked well to generate a reliable income stream to support Superfund cleanup activities. By all estimates, the cleanup task ahead is so great that a dependable source of funding is an absolute necessity. Faced with the prospect of many expensive cleanup operations during the next several years, waste-end proposals that threaten a less than fully reliable funding base should not even be seriously considered at this time. We are also concerned that proposals for complicated changes to the Internal Revenue Code at a time when our entire tax system is being reconsidered could result in a slowing of the reauthorization process precisely when the need for rapid Congressional action is most pressing. This

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[1] 301 Report at 5-21.

[2] Id. at 5-28.

[3] Id. at 5-22, 37, 38.

Congress should instead move expeditiously to reauthorize the proven and dependable funding mechanism created in 1980 so that EPA and the states can proceed with the job.

If, despite the complexities of devising a workable taxing scheme, the lack of necessary data, and the record of shortcomings in existing state waste-end tax systems, Congress decides to enact some form of a waste-end tax to support the Superfund, we strongly urge that:

(1) a flat tax on the various disposal methods rather than a degree-of-hazard tax be adopted at this time which does not encourage underground injection of wastes;

(2) no more than 10% of revenues be derived from a waste-end tax; and

(3) wet weight rather than dry weight be used as the unit of taxation under a waste-end taxing scheme.

According to EPA, a waste-end tax could be established today that did not attempt to differentiate between disposal methods according to the "degree-of-hazard" they are predicted to pose, but instead applied a flat tax on all disposal methods.[1] The Agency believes that the data derived from the recent survey on hazardous waste generators and treatment, storage and disposal facilities provides an adequate basis for establishing a flat tax.[1] Additional data, however, are required to support the development and implementation of an incentive-based degree-of-hazard tax.[2]

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[1] 301 Report. at 5-56.

NRDC strongly opposes adoption of a degree-of-hazard taxing scheme. At present, in the absence of necessary but unavailable supporting documentation, such an approach could have unintended adverse results. By assigning lower tax rates to certain disposal methods, such as underground injection, the impression that these are better disposal methods is advanced, even though no such comparative risk analysis has ever been undertaken. As a consequence, some waste streams are likely to be shifted from one inadequate land disposal method to another, instead of being treated and rendered non-hazardous or being destroyed in an environmentally safe fashion. This behavior undermines what seems to be the principal goal of the waste-end tax which is to encourage the proper management of our wastes. In this connection we would also note our continuing belief that it is more prudent public policy to create incentives for behavior changes through the organic provisions of RCRA and CERCLA rather than to attempt to raise the standard of conduct of disposers through an inherently complex and difficult to administer taxing scheme. The Superfund tax should provide reliable and adequate funds for all cleanup response actions. Schemes that work against this effort undermine the principal function of the Fund.

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[1] Westat, Inc., Final Report, National Survey of Hazardous Waste Generators and Treatment, Storage, and Disposal Facilities Regulated Under RCRA in 1981. Prepared for U.S. Environmental Protection Agency, Office of Solid Waste. Washington, D.C., 1984.

[2] 301 Report at 5-56.

NRDC would also like to emphasize that taxing underground injection at a lower rate, as has been proposed in both the House and the Senate, would be ill-advised at this time for several reasons: (1) considerable uncertainty surrounds the potential for injected hazardous wastes to be adequately isolated in the subsurface strata into which they were injected and intended to remain; (2) considerable quantities of hazardous waste are already being disposed by this method; and (3) it is far less tightly regulated than any other hazardous waste disposal method, and as a consequence far cheaper.

NRDC therefore recommends that if a waste-end tax is adopted that it be based on a flat tax scheme that does not attempt to differentiate between disposal methods based on their degree-of-hazard. According to Agency analysis, the flat tax scheme shows some promise in being able to generate reliable revenues.

We also urge that, if adopted at all, a waste-end tax should not be relied on for more than a small portion of the total revenues intended to be generated. No more than 10% of revenues should be derived using a waste-end tax and the remainder should come from the more reliable and proven feedstock tax.

Finally, NRDC urges that wet weight rather than dry weight be used as the unit of taxation under the waste-end taxing structure. As an EPA study found, dry weight may be more difficult than wet weight to administer as a unit of taxation.[1] Moreover, it is less reliable and provides the opportunity for waste manipulation for the purposes of tax reduction or avoidance. In addition, a dry-weight taxing mechanism is likely to have adverse enviromental effects by further encouraging underground injection, a disposal method which, as noted previously, involves serious unanswered questions about future damage to groundwater. Specifically:[2]

(1) Dry weight would have to be defined as either the non-water weight of the waste or its solid content. A solids content tax basis would make many highly mobile solvents tax exempt, whereas a nonwater definition would require fairly sophisticated waste analyses to determine the non-water portion of the waste.

(2) Wastes could be mixed together or diluted with water to reduce tax liability, and IRS or EPA could not verify taxes owed. Such incentives to dilute exist when there are high differential tax rates among disposal methods and especially when wastes are put into an underground injection well and cannot be sampled.

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[1] Pope-Reid Associates, "Effects of Changing the CERCLA Tax Basin," prepared for Office of Policy Analysis, U.S. Environmental Protection Agency, December 1983.

[2] *301 Report* at 5-73, 74.

(3) Mistakes in calculating dry-weight could contribute to significant revenue losses.

(4) The dry-weight of a waste could vary significantly from shipment to shipment, requiring frequent waste sampling and analysis to calculate the proper tax liability.

(5) EPA currently has no standard procedure for testing for dry-weight, whereas they do for wet-weight. A wet-weight tax would eliminate need to develop and implement testing protocols for dry-weight which could have to be incorporated in implementing regulations.

Wet-weight, on the other hand, is a common tested measure, frequently used by waste management facilities to maintain records and report information to EPA. Consequently, using a wet-weight ton basis would reduce or eliminate a number of factors that could contribute to errors in calulating the tax. There is no good reason at this time to establish a system so complex, prone to difficulties, and vulnerable to abuse that it is likely to be ineffective for any purpose of CERCLA.

Conclusion

In recognition of the great need for a significant-sized and reliable income stream to support Superfund cleanup activities, NRDC urges Congress to reauthorize CERCLA with a Fund in excess of $11.7 billion over the next five years, and with an effective and predictable funding mechanism. To this end, we would discourage the adoption of an unproven and unreliable waste-end taxing scheme to finance, even in part, the cleanup efforts. If, however, Congress intends to adopt a waste-end approach, no more than 10% of total revenues should be expected from such a scheme, a flat tax on the various disposal methods rather than a degree-of-hazard should be imposed and wet weight rather than dry weight should be the unit of taxation used.

Senator **Packwood**. Mr. Early, let me be sure I understand. You are recommending a fund level of about $11.7 billion, right?

Mr. **Early**. That is correct.

Senator **Packwood**. Which would be funded almost totally by a feedstock tax?

Mr. **Early**. The proposal in the Sikorsky bill would be a combination of feedstock taxes, waste-end taxes, and general revenues.

Senator **Packwood**. But your preference is for a feedstock tax alone?

Mr. **Early**. Well, I think if the program is a larger program, it is realistic to expect you are going to have other revenue sources. If the program is a smaller program, we see no reason to shift away from a feedstock tax exclusively.

Senator **Packwood**. Well, small is all relative. The program at the moment is only $1.5 billion over 5 years, and the feedstock tax is about $300 million a year. Even if we did nothing and go to the Administration's program, you are talking about coming close to quadrupling the feedstock tax.

Mr. **Early**. That's true.

Senator **Packwood**. And if we go to the Senate Environment and Public Works Committee, you are talking about, at 7.5, you are talking about quintupling it. And if we go to your figure, you are talking about an immense increase.

At what stage would you say the increase is sufficiently great that we should start thinking about other—I don't mean alternative, but other—sources of revenue?

Mr. **Early**. I think that you could raise, by increasing substantially the oil feedstock tax and the organic and inorganic chemical feedstock tax. Oil—you could go up to, say, 15 cents a barrel.

Senator **Packwood**. From its present point, 7.9?

Mr. **Early**. Right. On the average you could triple the rates for the organic and inorganic chemical feedstocks, which was what was done, for instance, in the House bill last year and is substantially adopted in the Sikorsky bill, and raise around $9 billion. I think it would raise around $9 billion just that way alone.

Senator **Packwood**. It would. What you are saying is not only by in large limit it to the feedstocks but very specific feedstocks, if you are going to a 15 cent a barrel tax on oil.

Mr. **Early**. That's true. Now, obviously the program in the House version is broader in terms of it is a much larger program than the one recommended by the Reagan administration.

Senator **Packwood**. Ms. Broad, do you want to comment on the same question?

Ms. **Broad**. Well, Senator, we do agree with the Sierra Club and the other organizations which have signed on that a feedstock tax should be the primary source of funding of the program, because it is a proven reliable source.

Senator **Packwood**. Well, it's a proven reliable source at $300 million a year.

As you sat through the testimony this morning and even the testimony of Dr. Nordhaus, what about this argument that we are going to have a tremendous trade problem? If you are talking about a feedstocks tax with any place from a 400 to a 1,000 percent increase, what happens?

Mr. EARLY. Well, I would like to address, and my testimony specifically does address, the study to which Mr. Nordhaus testified. I addressed this subject last year as well.

An interesting aspect about the way the study was conducted is, they looked at the impact of the rates of the Energy and Commerce past bill, which was roughly a tripling of the rates. And the study found that the impact on production was perhaps 2 percent for some of the feedstocks and less than 2 percent for some of the intermediates derived from those feedstocks.

So then the study went on to say,

> Well, let's do more than triple. What happens if you multiply the feedstock tax by an order of magnitude of 5 or 10 times the current level? Then look at the economic chaos that is created.

In fact, they created a strawman.

The data in that study does not indicate that a tripling would have an impact which I believe exceeds the margin of error in the kind of economic metric model that was utilized in the study. I mean, 2 percent—you are talking about a very broadbased study. It is very hard to tell whether that is a totally accurate number.

Senator PACKWOOD. On this issue I can put you in bed with the Treasury Department, at least. If we are going to increase the revenues, you and Treasury agree they ought to be feedstock increases.

Mr. EARLY. Well, there are some very interesting aspects about it. We think also that the Treasury is on the mark in terms of how to design a waste-end tax, too. Where we part company, obviously, is in the amount of money that is needed to be raised.

The interesting aspect about the administration's position is that, while they are very big fans of supply-side economics, they are not in favor of a supply-side Superfund Program. We believe if you could put more money in the program, that that money would be very effectively spent, and that those members of the public who are currently being affected by the Superfund sites would definitely assure that those money were spent.

Senator PACKWOOD. Ms. Broad, any last comment?

Ms. BROAD. Yes, Senator. Let me add that we do support the idea that a greater number of feedstock chemicals shall be taxed and contribute to the fund.

Senator PACKWOOD. Thank you both. You have been very patient waiting all morning. I appreciate it, and thanks so much.

Mr. EARLY. Thank you, Mr. Chairman.

[Whereupon, at 12:57 p.m., the hearing was concluded.]

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SUPERFUND REAUTHORIZATION

FRIDAY, APRIL 26, 1985

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m. in room SD-215, Dirksen Senate Office Building, Hon. Robert Packwood (chairman) presiding.

Present: Senators Packwood, Roth, Chafee, Heinz, Wallop, Grassley, Bentsen, Baucus, Bradley, and Mitchell.

The CHAIRMAN. The committee will come to order, please.

This is the second of 2 days of hearings on the subject of the Superfund. And our first witness today is Congressman James Florio, with whom I have worked on a good many matters over the years, and who has been one of the leaders in the fight for the creation and for the extension of Superfund legislation.

Jim, it's good to have you with us.

STATEMENT OF CONGRESSMAN JAMES J. FLORIO, U.S. REPRESENTATIVE, STATE OF NEW JERSEY

Mr. FLORIO. Thank you very much, Senator.

In the interest of conserving the committee's time, I have a full statement that I would like to put into the record, and I will excerpt from it and bring out what I think are the relative points.

The CHAIRMAN. The statement will be in the record in full.

Mr. FLORIO. I think everyone knows by this time that the very important program, Superfund, which was created in 1980 for the authorization and the funding and the authority to deal with the toxic waste dumpsites that we have in this Nation in great number, will expire on October 1, 1985. And yet we also realize that only a small amount of the anticipated work that was to have been done had, in fact, been done.

Few imagined the actual scope of the national funding needs that we now imagine are going to be required to complete that job. In the first few years of EPA's existence, I think it's fair to say that the gross mismanagement of the program has resulted in many of the problems that we still face today.

However, there has been much improved data nature of the sites which must be cleaned up lead any objective observer to the conclusion that there is a significantly expanded funding level for Superfund over the next 5-year period that is going to be required.

I would call to your attention an article in today's New York Post on page 2 that has contained in it a study that concludes that only 16 percent of the total Superfund moneys have been used for remedial cleanup work over the past 4½ years.

I think there are some basic statistics that we should be aware of.

The CHAIRMAN. Congressman, let me make one correction. I saw it in the Washington Post, and you said the New York Post.

Mr. FLORIO. I stand corrected. The Washington Post. [Laughter.] And I also note that there is a substantial difference there.

At any rate, the study, which was done by the National Campaign Against Toxic Hazards, contains the fact that less than 10 percent of the 800 sites, approximately 800 sites, on the national priorities list—and they, of course, are the only sites that can be cleaned up under Superfund of the 22,000 plus sites that do exist in the Nation—that the study shows that only 10 percent will receive any moneys for actual cleanup during this first 5-year period. EPA expects to place at least 2,200 sites on the national priorities list exclusively for cleanup. The national priorities list, of course, being those sites that are categorized as imminent and substantial dangers to people's health and the environment. GAO, in an independent study, has suggested to us that EPA is being extremely conservative. They anticipate that the national priorities list site inventory will go to 4,000 sites rather than 2,200. Others say that GAO has been conservative, and that it will go bigger than this 4,000.

Be that as it may, the list of problem sites is growing very, very rapidly. EPA says that the Federal Government's environmental costs for the rest of the sites that they expect to place on the national priorities list would run as high as $23 billion for the likely midrange of $11.7 billion to get them cleaned up.

GAO, once again, disagrees with EPA's estimates, telling us that the Federal Government's share of cleanup costs could be as high as $39 billion. Many independents organizations—the National Governors Association—talks about committing between $9 and $12 billion over the next 5 years. Environmental groups go up to as high as $20 to $30 billion. The National Chemical Manufacturers Association has endorsed funding levels of $4 to $5 billion although they acknowledge that to have cleanup of the listed sites at that financial amount will entail 30 years to clean up the sites that are on the national priorities list. That is something that I think most of us feel very uncomfortable with telling—the American people that it's going to take 30 years to cleanup the priority sites, and therefore the Congress, I don't think, has been supportive of that minimal level of funding.

I'd like you to keep in mind that Superfund must support several activities in addition to the basic cleanup activities of the statute. None of these essential activities were included in the cost estimates that I previously mentioned.

For example, the fund must support the administration of the basic Superfund Program. The fund is also required to pay for emergency relief and removal action in cases where site contamination is threatening to the health of citizens in the surrounding communities. And, certainly, no one would dispute the appropriateness of that statutory mandate.

Finally, the States have implored us to offer them some relief in the important area of long-term operation and maintenance of the finished sites. That is to say that a good number of these sites end up being encapsulated and that someone is charged with the responsibility of monitoring and maintaining those encapsulated sites for prolonged periods of time, sometimes as long as 20 years. As of now, that is 100 percent the responsibility of the States. That can become a very substantial number. I offer to you as an example, Prices Pit, which is a site in Atlantic City. The initial remedial work for the Federal Government, with a Federal share of 90 percent and a State share of 10 percent, comes to about $11 million. The long-term operating and maintenance cost, which is 100 percent State, will have to be conducted at the rate of $1 million for about 20 years. So, in this instant the breakdown is clearly to the detriment of the States under the existing system that we have.

Your sister committee, the Ways and Means Committee, to give you some sense of the priorities out of a committee that is legitimately regarded as very frugal with the taxpayers' dollars, last year when our committee bill was referred to it, our committee bill was referred to it at the rate of $9.5 billion. The Ways and Means Committee had extensive hearings and much to the surprise, and I suspect regret, of some of the industry people, increased the allocations up to $10.1 billion. And that, of course, was the bill that was brought to the House floor and was passed by an overwhelming margin. And, again, it was because of the expertise of the Ways and Means Committee. It felt that $9.5 billion was not enough and that $10.1 billion came closer to being able to serve the authorized functions contained in our bill.

The final bill approved by the House last year supported the program through two basic sources—a continuation of the current feedstock tax system, that is, the system upon which we tax those materials which are the chemical building blocks out of which all of our toxic waste are derived. Second, there was an authorized appropriation from general revenues. Under the House bill, each covered chemical and metal feedstock substance would be taxed at an average of 3 percent of the sales price. All individual tax rates are capped at $30 per ton so that a substance's relatively high sales price does not produce an inordinately high tax rate. Imported feedstocks are taxed at the same level. Exported feedstocks are not taxed. And I think that's a very important point and I want to come back to it in a minute.

One other point about funding mechanisms deserves particular mention. The administration's Superfund proposal that was submitted to us not too long ago contains a fundamental departure from the approach we have historically used in calculating revenues for Superfund. It assumes that some $800 million of reauthorized funds will be supplied primarily by actions to recover penalties and costs from private parties and those who are found liable for creating specific sites. In other words, the funding level raised by the taxes in the administration's proposal is only $4.5 billion over the 5-year period. And the total funding level is only raised to $5.3 billion when you count the money from such speculative sources as anticipated court judgment returns. In many instances, the court actions haven't even been initiated yet.

When we created Superfund in 1980, it was our clear goal and intent that strong liability provisions in the law would enable the fund's $1.6 billion in tax revenue to be consistently replenished by law suits against private responsible parties. But we never based our decisions regarding the funding level for the programs on some vague anticipation of what those law suits would bring in. I think that was a good basic approach and we should not deviate from that approach to have Superfund be regarded as a more speculative fund in the hope that at some point EPA will recover the money because EPA to this point has not been particularly vigorous in recouping those moneys. We therefore are not sure we will be able to plan out and count on those speculative law suit returns.

The historic record of Superfund confirms the folly of counting on such dollars before they are collected. An analysis prepared by EPA for my subcommittee shows that although responsible parties have promised to pay $255 million in cleanup costs at priority sites, to date, less than half of those sums have actually been spent on such cleanups. The total amount spent, some $113 million, is only a small fraction of the Superfund tax dollars committed to clean up other activities. In the related area of moneys recaptured from actual Superfund dollars that are spent, our recollection is that only $7 or $8 million has been so recaptured over the 4½ year period of the $1.6 billion tax fund. So to anticipate that somehow we are going to be able to see judgments and recoveries take up a big portion of the resources that we need is not, I think, very realistic.

In the few minutes I have remaining to testify, I would like to briefly address two final issues that have played a major role in the Superfund reauthorization debate last year, and I suspect will again this year.

First, the economic impact of increased taxes. And the second point: EPA's ability to spend a significantly expanded Superfund amount in a reasonable way.

On the first point, the economic impact of increased taxes. The chemical industry has argued that the most important negative economic effect of higher taxes which have been proposed is the likelihood that such taxes would worsen an already troubling adverse trend in the U.S. balance of trade. Industry notes that even though Superfund taxes are, in fact, imposed on imported feedstocks, a fact that was blurred over in some debate last year when some said that this would be an immediate competitive disadvantage to chemicals inasmuch as the feedstocks were not being taxed. The fact of the matter is imported feedstocks are and always have been taxed under our system.

But the point by the chemical people has been that the taxes on imports can easily be avoided by those choosing to import the derivative chemical products, such as feedstocks. That is to say, yes, you import feeds, you are taxed on imported feedstocks. But when you import the derivatives of those feedstocks, you are not taxed and many are converting the feedstocks overseas into derivatives and, therefore, they are not being taxed.

I've satisfied myself as a result of hearings before my committee, as a result of extensive cooperation with the Ways and Means Committee staff, as a result of extensive communication with Customs, the ITC, that there is some validity and some merit to this point.

My subcommittee held a specific hearing on this very issue. The testimony we received indicated that Superfund taxes are a relatively minor factor affecting the U.S. balance of trade as it affects the chemical industry. Such other factors, as this committee knows, such as the value of the dollar, sources of cheap energy abroad have a far greater impact on the overall trade questions with regard to the chemical industry.

Nevertheless, witnesses urged us to develop a more effective Superfund import tax program. I'm committed—and I'm pleased to announce here—that I'm committed to pursuing this important initiative with Chairman Rostenkowski and, of course, any on this side who see fit to move in that same direction. And I would urge this committee to give it similar consideration.

That is to say that we have ascertained that the ITC and the Customs people have already isolated some of the feedstock derivatives that are being able to have assessments against them right now by way of Customs, and, therefore, we can address the concern of last year that it would be administratively impossible to isolate those feedstock derivatives for the assessment of a Superfund tax on them. This concern has lost a great degree of validity inasmuch as we have now found that administratively it would not be a difficult thing to do.

The last argument that EPA raises is that EPA cannot spend increased funding fast enough. In this instance, in a sense, they are saying, yes, there's a problem; yes, our preliminary studies talked about $11 to $16 billion being required to significantly address this problem, but we are not sure if we can spend anything like the $10 billion that the Congress wants to give to us in a cost effective way.

I would be the first to agree that the current program must be fundamentally restructured in order to absorb, in a cost effective manner, the funding levels set in the legislation that we passed last year and set in legislation that would be passed that would approximate the funding level somewhere between what this committee is considering and what our committee is considering.

In fact, the cost of failing to restructure the program so that accelerated cleanup can be accomplished are virtually unthinkable. At the current cleanup rate of six sites having been cleaned up in 4 years, it takes 1,500 years to finish the cleanup at the minimum number of sites of 2,200 sites that EPA expects to place on the national priority list.

So basic reforms in the implementation of the program are clearly necessary. The EPA administrator, Mr. Thomas, is on record—and I trust his good faith—of going forward to initiate several basic changes to put some teeth into the law, and we are pleased to work with him in that direction.

Unfortunately, when it comes to projecting funding needs for Superfund over the next 5 years, Mr. Thomas, who generally exhibits great faith in the management capability of his agency, suddenly experiences a crisis in confidence. In fact, several members of this committee who are also members of the Environmental and Public Works Committee on this side will remember that when he was first asked about funding levels just last year when he made his proposal, Mr. Thomas indicated that a level of $7.5 billion would be appropriate. Hence, the numbers that you are considering.

But within a matter of a few days and perhaps following some heated consultations with the Office of Management and Budget, he was back with the figure of some $5 billion as the most the agency could spend effectively. And as I have testified in my previous comments, that $5.3 billion soft number really translates out to about $4.5 billion, if I recall, in hard tax dollars.

Mr. Thomas now attempts to justify his gloomy forecast regarding EPA's ability to spend Superfund money on two grounds. First, that the agency lacks the personnel and management capacity to run a larger program than they are currently running. And, second, that insufficient resources in such crucial private sector industries as commercial laboratories, engineering and design firms who inhibit the growth of the program.

The response to Mr. Thomas' first concern is relatively simple. Since Superfund can be used to support the Agency's administrative expenses, he will be able, with an increased fund, to hire the personnel he needs and to implement an expanded program. I'm conducting my own analysis of Mr. Thomas' management capabilities on the basis of his track record in running the Superfund Program over the last 2 years. And the analysis unequivocally shows that EPA, if EPA only manages to maintain the steady rate of growth that the program has experienced over the last 2 years, the agency could easily be able to absorb and use in an effective way $9.8 billion in cleanup money over the next 5 years. It turns out that Mr. Thomas has been able to achieve in the 2 years that he has been there a 40-percent increase each year in the funds obligated for actual cleanup. Steady increases of that same magnitude—no radical changes—steady increases of the same magnitude that Mr. Thomas has established for the next 5 years will absorb $9.8 billion in a program that we all concede is being run now, in the last 2 years, in a relatively cost effective manner.

To resolve the dispute over the last question Mr. Thomas seems to offer, for wanting to argue for less money than he had previously asked for, the dispute over private sector resource capabilities, I asked the Congressional Research Service to conduct a detailed study of the future capacity of these industries.

CRS found that adequate capacity exists in the laboratory, design, engineering and construction industries to support a significantly expanded Superfund. These independent studies and findings—and I will submit also letters from the various affected industries and their trade groups—saying that beyond question the independent laboratories, industry, the consulting engineers, the building contractors, all regard themselves at this point as grossly under used in this area and look forward with some direction to be able to take part in the clean-up activity that we all want to see go forward.

The independent findings should put to rest Mr. Thomas' fears that American industry lacks the resources to finish the job, the cleanup job, at an acceptable pace.

There is no environmental problem more important to the American people, Mr. Chairman. And the facts supporting the need to extend and to expand Superfund are irrefutable. To expand it, to extend it and to put teeth into the law, there are some changes that are incorporated in the bill that was referred to this committee. We have other provisions in our *bill that I would describe as* teeth, maybe even a bit sharper teeth than you might have in your proposal. But I think we are all committed to making sure that we are not going to be sitting here 5 years from now and seeing only another six sites being cleaned up for a full 10-year program of however many billions of dollars and only having 12 sites cleaned up. That's totally beyond the realm of comprehension as far as I'm concerned.

This committee and it's sister committee on this side, as well as the two committees—the Finance Committee and the authorizing committee—I think are sensitive to the problems that the American people have, and I'm hopeful that we can all work together to resolve the remaining few problems that will enable us to have a piece of legislation passed and signed into law by the 1st of October so that we will not find out what any unintended consequences may flow from our failure to reauthorize the program by the 1st of October, and have some of these programs, including some pending litigation, lapse. That would be very unfortunate. I don't think any of us want to explore what the problems would be if this program did lapse and there were programs in existence, there was litigation in existence and that the authority be put in question for conducting those programs.

So I'm pleased to be here, and I'm very happy to be of assistance to you.

The CHAIRMAN. Thank you.

[The prepared written statement of Representative Florio and a letter from the American Consulting Engineers Council follows:]

TESTIMONY OF

THE HONORABLE JAMES J. FLORIO, CHAIRMAN

HOUSE SUBCOMMITTEE ON COMMERCE, TRANSPORTATION AND TOURISM

Mr. Chairman and members of the Committee, I want to thank you for the opportunity to appear before you today as you begin your consideration of legislation to reauthorize the Superfund program. As you know, the funding for this vital program will expire on October 1, 1985 with cleanup begun at only a small fraction of the nation's worst abandoned hazardous waste sites. All involved with the program -- from the Chemical Manufacturers' Association to the Sierra Club -- agree that it must be reauthorized, leaving to us the crucial questions of when, how and how much.

As many will remember, the current Superfund law established a $1.6 billion fund for an initial five-year period. The President authorized the Environmental Protection Agency to begin the work of assessing the thousands of abandoned hazardous waste sites across the country, identifying the worst sites eligible for federal cleanup funds, and launching cleanup of those so designated. Revenues for the cleanup effort were generated by taxes on the chemical industry, plus a 12.5 percent appropriation from general federal tax revenues.

Although those of us who worked on the original legislation suspected that a second installment of the program would be necessary, few imagined the actual scope of the additional funding needs which face us today. EPA's gross mismanagement of the program in its early years, partnered with much improved data concerning the number and nature of the sites which must be cleaned up, lead any objective observer to the irrevocable conclusion that significantly expanded funding levels are crucial if we are to accomplish the goals we established back in 1980.

Consider the following basic Superfund statistics:

* A study released today by the National Campaign Against Toxic Hazards contains the first comprehensive accounting of where and how the current $1.6 billion Superfund has been spent. The study shows that less than 10 percent of the 800 sites on the National Priorities List will receive any money for actual cleanup during the first five years of the program. To date, EPA has managed to complete cleanup at only six priority sites.

* EPA expects to place at least 2,200 sites on the National Priorities List someday. Even this apparently large number represents only a fraction of the 19,000 sites now know to exist across the country and both the General Accounting Office and state officials dispute EPA's estimates. GAO tells us that 4,000 sites will end up on the list, while state officials say that the list will swell to some 7,000 sites over the long-term.

* EPA says that the Federal government's cleanup costs for the rest of the sites it expects to place on the

National Priorities List could run as high as $23 billion, with a likely mid-range of $11.7 billion. Once again, GAO disagrees with EPA's estimates, telling us that the Federal government's share of cleanup costs could be $39 billion and that, if the program continues at its current slow pace and inflation is factored into the equation, these cost estimates should double.

- Based on all these facts and figures, state organizations (including the National Governors' Association) urge us to commit between $9 and $12 billion for five more years of a reauthorized program. The environmental community urges us to commit $13.5 billion over the next five-year period. Even the Chemical Manufacturers' Association has endorsed new funding levels of $4-5 billion, although the group acknowledges that cleanup of listed sites could take close to three decades at those levels. Finally, the Administration has proposed a funding level of some $5.3 billion for the second five-year reauthorization period.

The legislation you are considering today, which was reported out by the Senate Environment and Public Works Committee, would establish funding levels for a reauthorized Superfund program of $7.5 billion over the next five years. The bill adopted by the House on August 10, 1984, by a vote of 323 to 33, would have established a funding level of $10.1 billion over the same period.

As you evaluate the legislation, and the funding levels which are proposed, please keep in mind that Superfund must support several activities in addition to basic cleanup and none of these essential activities were included in the cost estimates I mentioned earlier. For example, the fund must support the administration of the basic Superfund program. The fund is also used to pay for emergency relief and removal actions in cases where waste site contamination is threatening the health of citizens in surrounding communities. Finally, the states have implored us to offer them some relief in the important area of long-term operation and maintenance of finished sites. Under current law, they must support all of these costs, but under the legislation you are considering they would be given assistance with operation and maintenance costs during the first few years after a site is cleaned up.

When it was faced with all of these cost estimates and evidence concerning program needs, your sister Committee on the House side determined to raise the funding levels of the legislation I had originally introduced from $9.5 billion to $10.1 billion. Its sound and wise decision was based on an exercise of essentially conservative fiscal judgment: while the taxes which support the program now may hurt, we have no choice but to get on with the job as rapidly as possible before the mounting costs of this devastating environmental pollution climb out of our reach.

The final bill approved by the House last year supported the program through two basic sources: a continuation of the current feedstock tax system and an authorized appropriation from general tax revenues.

Under the House bill, each covered chemical and metal feedstock substance would be taxed an average of three percent of the sales price. All individual tax rates are capped at $30/ton so that a substance's relatively high sales price does not produce an inordinately high tax assessment. Imported feedstocks are taxed at the same levels. Exports are not taxed.

The funding mechanism developed by the Ways and Means Committee accomplishes the central goal of any Superfund tax system -- guaranteeing a stable and effective source of revenue for the program. While I recognize that you will soon hear many other funding proposals put forward and that we must all retain flexibility to evaluate such proposals carefully, I urge you to also give complete consideration to the feedstock tax system developed by your colleagues.

One other point about funding mechanisms deserves mention here. The Administration's Superfund proposal contains a fundamental departure from the approach we have historically use in calculating revenues for Superfund. It assumes that some $80 million of the reauthorized fund will be supplied primarily by actions to recover penalties and costs from private parties who are found liable for creating specific sites. In other words, the funding level raised by the taxes in the Administration's bill is only $4.5 billion, and the total funding level is only raised to $5.3 billion when you count the money from such speculative sources.

When we created Superfund in 1980, it was our clear goal and intent that the strong liability provisions in the law would enable the fund's $1.6 billion in tax revenues to be constantly replenished by lawsuits against private responsible parties. Bu we never based our decisions regarding the funding levels for th program on some vague anticipation of what those lawsuits would bring in.

The historical record of Superfund confirms the folly of counting such dollars before they are collected. An analysis prepared by EPA for my Subcommittee shows that although responsible parties have promised to pay $255 million in cleanu costs at priority sites to date, less than half of these sums have actually been spent on such cleanup. The total amount spe -- some $113 million -- is only a small fraction of the Superfu tax dollars committed to cleanup and other activities by EPA.

In the few minutes I have remaining, I would like to addres two final issues which have played a major role in the Superfun reauthorization debate: the economic impact of increased taxes and EPA's ability to spend a significantly expanded Superfund.

The chemical industry has argued that the most important negative economic effect of the higher taxes which have been proposed is the likelihood that such taxes will worsen an already troubling adverse trend in the U.S. balance of trade. Industry notes that even though Superfund taxes are imposed on imported feedstocks, the taxes can easily be avoided by those choosing to import the derivative chemical products of such feedstocks.

Several weeks ago, my Subcommittee held a hearing on this crucial issue. The testimony we received indicated that Superfund taxes are a relatively minor factor affecting the U.S. balance of trade; such other factors as the value of the dollar and sources of cheap energy abroad have a far greater impact on the overall trade picture. Nevertheless, witnesses urged us to develop a more effective Superfund import tax system. I am committed to pursuing this important initiative with Chairman Rostenkowski and I would urge this Committee to give it similar consideration.

As for the argument that EPA cannot spend increased funding fast enough, I would be the first to agree that the current program must be fundamentally restructured in order to absorb the funding levels set in the legislation. In fact, the costs of failing to restructure the program so that accelerated cleanup can be accomplished are nearly unthinkable. At the current cleanup rate of six sites every four years, it could take 1,500 years to finish cleanup at the minimal number of 2,200 sites EPA expects to place on the National Priorities List someday. So basic reforms in the implementation of the program are clearly necessary and EPA Administrator Lee Thomas has already inititated several such changes.

Unfortunately, when it comes to projecting funding needs for Superfund over the next five years, Mr. Thomas -- who generally exhibits great faith in the management capacity of his agency -- suddenly experiences a crisis in confidence. In fact, the several members of this Committee who are also members of the Environment and Public Works Committee will remember that when he was first asked about funding levels last year, Mr. Thomas indicated that a level of $7.5 billion would be appropriate. But within a matter of days, and perhaps following some heated consultations with the Office of Management and Budget, he was back with a figure of some $5 billion as the most the agency could spend effeciently.

Mr. Thomas now attempts to justify his gloomy forecasts regarding EPA's ability to spend Superfund money on two grounds: first, that the agency lacks the personnel and management capacity to run a larger program, and second, that insufficient resources in such crucial private sector industries as commercial labs and engineering and design firms will inhibit the growth of the program.

The response to Mr. Thomas' first concern is relatively simple: since Superfund can be used to support the agency's administrative expenses, he will be able -- with an increased fund -- to hire the personnel he needs to implement an expanded program. I have conducted my own analysis of Mr. Thomas' management capacity on the basis of his track record in running the Superfund program over the last two years. The analysis shows that if EPA only manages to maintain the steady rate of growth the program has experienced over that period, the agency should easily be able to spend $9.8 billion in cleanup monies over the next five years. It turns out that Mr. Thomas has been able to achieve a 40 percent increase each year in the funds obligated for cleanup; steady increases of the same magnitude over the next five years would consume a $9.8 billion fund.

To resolve the dispute over private sector resources, I asked the Congressional Research Service to conduct a detailed study of the future capacity of these industries. A copy of that study is attached to my testimony and I would ask that it be included in the record of this hearing. CRS found that adequate capacity exists in the laboratory, design, engineering and construction industires to support a significantly expanded Superfund. These independent findings should put to rest Mr. Thomas' fears that American industry lacks the resources to finish the cleanup job at an acceptable pace.

There is no environmental problem more important to the American people than the thousands of abandoned waste sites across the land. The facts supporting the need to extend and expand Superfund are irrefutable. Our only possible course -- the only responsible course -- is to act, and act decisively, to ensure the future of the program as quickly as possible.

Mr. Chairman, that completes my prepared testimony and I would be happy to answer any questions you may have.

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QUESTIONS AND ANSWERS ABOUT THE HAZARDOUS WASTE REDUCTION ACT

A Waste-End Tax Bill Introduced By:

Representative Claudine Schneider (R-RI)
Representative Ron Wyden (D-OR)
Senator William Proxmire (D-WI)

For more information, contact:

Eric Schaeffer
Northeast-Midwest Institute
Tel: 544-5200

Who Pays the Tax?

The tax is collected from the owners and operators of treatment, storage and disposal facilities (TSD) permitted under the Resource Conservation and Recovery Act (RCRA). All hazardous wastes regulated under RCRA must be taken to a permitted TSD facility.

According to EPA, there are 4,818 of these off-site and on-site facilities currently in operation. Ninety-five percent of all treatment, storage, and disposal takes place at only 240 facilities.

What Types of Waste Disposal are Taxable?

All forms of land disposal regulated by RCRA would be taxable, including landfills, surface impoundments used for disposal, and injection wells. The tax also would apply to land treatment, ocean disposal, and the export of hazardous waste.

The tax would apply to any wastes treated or disposed of in violation of RCRA permits.

Both on-site and off-site disposal would be subject to the tax. EPA estimates that 85 percent of all hazardous waste disposal occurs on-site, typically in large surface impoundments or injection wells.

What Are the Tax Rates?

All forms of land disposal except injection wells would be taxed at a rate of $20 per ton. The $20 rate would apply to landfills, disposal surface impoundments, waste piles, and land treatment. The $20 rate also covers ocean disposal, the export of hazardous waste, and wastes treated or disposed of in violation of RCRA permits.

The disposal of hazardous wastes in underground injection wells would be taxed at a rate of $5 per ton.

What About Treatment of Hazardous Waste?

The bill provides that wastes rendered nonhazardous by RCRA standards within one year of receipt at the TSD facility would receive full credit against the tax. This credit would cover such treatment processes as incineration, recycling, and the neutralization of corrosive acids. Wastewater treatment under Clean Water Act permits would not be subject to the tax.

Any waste that remains hazardous after twelve months of treatment would be taxed. This provision is intended to prevent "pseudo-treatment" (such as solar evaporation ponds) to avoid the tax.

Residues from any treatment process that are land disposed would be subject to the tax. The tax also would apply retroactively to any waste treated in violation of permit specifications.

What Types of Waste are Taxable?

All wastes classified as hazardous under the Resource Conservation and Recovery Act at the time this waste-end tax legislation is enacted into law would be taxable. These include toxic as well as characteristic wastes that are ignitable, corrosive, or reactive.

Are any Hazardous Wastes Excluded from the Tax?

All hazardous wastes not covered by RCRA's regulatory framework are exempt from the tax. Examples include small generator wastes, mining waste, the temporary on-site storage of hazardous waste (90-day limit), and the discharge of effluents permitted under the Clean Water Act.

Waste removed from a Superfund site to a permitted land disposal facility would not be taxed, in order to help keep down the cost of cleanup. While it would be more appropriate to destroy Superfund wastes than to shift them to another land disposal facility, the choice of cleanup method under the program should be determined under guidelines provided by Congress, rather than through waste-end tax policy.

In addition, a number of existing disposal sites are expected to close, due to their inability to meet more stringent operating requirements imposed by Congress during reauthorization of RCRA. Wastes removed from these closed sites to permitted facilities would not be taxed. As with the exclusion for Superfund wastes, the rationale is to avoid creating obstacles to compliance with RCRA regulations.

How Much Revenue Would the Tax Raise?

The bill would raise an estimated $286 million per year, a figure based on data derived from EPA and the Chemical Manufacturers Association. The revenue estimated is calculated below:

Method	Volume	Tax	Revenue
Landfills	3 MMT	$20/ton	$ 60 million
Land Treatment & Waste Piles	1 MMT	$20/ton	$ 20 million
Disposal Impoundments	1 MMT	$20/ton	$ 20 million
Injection Wells	32 MMT	$ 5/ton	$160 million
	Convert from Metric to English tons:		$ 26 million
		TOTAL REVENUE:	$286 million

All volume estimates are expressed in metric tons, while the tax is based on English tons (Metric Tons:English Tons = 1.1:1). The volume data is taken from EPA's Westat Survey, except for disposal impoundment figures, which are derived from a survey conducted by the Chemical Manufacturers Association.

How Would the Tax be Paid?

The tax would be paid by the TSD facility on a quarterly basis upon receipt of hazardous waste. A full credit would be provided for all wastes rendered nonhazardous by treatment within 12 months of receipt at the facility. To avoid double taxation, full credit would be provided for waste moving from one unit or facility to another.

How Would the Tax be Administered?

RCRA requires that all off-site disposal be recorded on a manifest, and on-site disposal on an operating log. In addition, all waste disposal facilities are required to prepare a comprehensive biennial report listing the amount and types of waste handled.

These documents will provide the basis for record-keeping under the tax. The bill directs the IRS to refine further the reporting system for tax purposes. An EPA study has concluded: "Although changes to the existing reporting and information systems are necessary to provide data on an annual basis for all facilities, these changes are not likely to impose a large incremental burden on the regulated community, the states, or EPA."

Would The Tax Rates Provide an Incentive to Reduce Waste Disposal?

Yes. An EPA study found that a waste-end tax would have a significant effect in shifting waste to treatment. Relatively low tax rates provide a substantial incentive to reduce high volume disposal of liquid wastes. This is due to the economies of scale that can be realized in treating large volumes of waste.

For example, the EPA study estimated that at a $5 per ton rate, about a quarter of all wastes now injected in deep wells could be rendered nonhazardous through treatment, principally by neutralizing corrosive and reactive wastes.

Are the Goals of Waste Reduction and Raising Revenue from the Waste-End Tax Contradictory?

Both objectives can be accommodated if the revenue projections for the waste-end tax are based on the most conservative estimates possible.

For this reason, a number of waste management activities that would be subject to the tax -- and would produce some revenues -- deliberately were excluded from the revenue estimates because they are difficult to quantify. They include wastes "stored" in the land for longer than the RCRA 90-day limit, wastes "treated" for longer than 12 months, and wastes taxed because of a violation of treatment or disposal permits.

The bill also provides for an automatic upward adjustment of the rates for any year in which the waste-end tax revenues fell short of projections.

This provision is similar to that included by the administration in its Superfund reauthorization proposal.

Why Tax Deep Well Injection?

An estimated 32 million tons of hazardous wastes are injected into deep wells every year, making this method the largest source of land disposal in use today. While little is known about deep wells, the available evidence suggests cause for concern about the environmental side-effects of this technology.

Leaks at Chemical Waste Management's deep wells in Vickery, Ohio prompted the state EPA to slap two fines totalling $16 million on the site operators. The rupture of an injection well in Presque Isle, Pennsylvania led to the possible contamination of Lake Erie, and to the site's placement on the Superfund National Priority List. The industry trade journal Chemical Week has warned about the potential hazards of deep well injection.

The lower rate of $5 per ton for injection wells provided by the bill compensates for the fact that wastes must be dilute to be suitable for this method of disposal.

Why Not Tax on a Dry-Weight Basis?

Wastes with a higher water content are not necessarily "better" than solid wastes. Liquid wastes are more mobile, more liable to move into groundwater, and less susceptible to containment through land disposal.

The practical effect of a dry-weight tax would be to reduce drastically revenues from injection wells. For example, the non-water content of injected wastes ranges from 1 to 5 percent of total volume. A $50 per ton dry-weight tax would raise as little as 50 cents per ton on a wet-weight basis from wastes injected into underground wells.

An EPA study concluded that a dry-weight tax would be more complex to administer and take longer to implement than a wet-weight tax. As a result, it would be virtually impossible to predict revenues from a dry-weight tax.

The same EPA study found that the high cost of sampling ($35 to $70 per barrel) for non-water content would make the tax prohibitively expensive for small business.

Will a Waste-End Tax Encourage Illegal Disposal?

EPA compared states with waste-end taxes to those without to determine whether the reported incidence of midnight dumping increased with the tax. The study found no such correlation.

EPA has indicated that a waste-end tax could help refine the existing data on the treatment, storage and disposal of hazardous waste. The data could be used by both the IRS and EPA to target subsequent permitting and enforcement activities.

Have State Waste-End Taxes Produced the Revenues Projected?

In the summer of 1984, EPA conducted a survey of the waste-end tax programs in eight states.

In six states, waste-end taxes had generated 71 to 98 percent of projections; in two states, revenues were ahead of projections. (For perspective, the Superfund feedstock tax has realized 78 to 84 percent of revenue projections).

EPA found that previously reported shortfalls in initial revenues from waste-end taxes were due primarily to inadequate data on actual waste volumes, overall economic recession during the startup period, failure to account accurately for the cost of tax exemptions, and lack of programmatic resources during startup.

American Consulting Engineers Council
1015 Fifteenth Street, N.W., Washington, D.C. 20005
202-347-7474
Telex: [illegible] AMCONENGRC WSH

March 7, 1985

Honorable James J. Floric
Chairman
Subcommittee on Commerce,
 Transportation and Tourism
Committee on Energy & Commerce
House of Representatives
Washington, D.C. 20515

Dear Chairman Florio:

The American Consulting Engineers Council is pleased to respond to your request concerning the capacity of the private engineering community to perform site assessment and remedial design and other engineering services to implement hazardous waste site clean-ups. In our opinion there is adequate capacity within the industry to respond to both public and private demand for engineering services. Moreover, the industry has the capacity to expand that capacity by appropriate management of resources, if the program at the federal and state level is properly directed to utilizing technical resources for actual clean-up related activities. Capacity is only an issue where resources are consumed by non-engineering requirements of the program or where management and policy constraints impact resource availability.

We have identified within the limited time since receiving your request more than 300 firms who have the direct or related experience and capability to perform one or more of the critical skills necessary for assessment, design and other services. These firms employee more than 27,000 engineering, scientific, technical and support personnel. This is more than twice the civil engineering capacity of the civilian sector of the entire federal government. Because of the multiple discipline nature of this work a substantial percentage of these firms are large national firms who have branch offices in many states. We have further categorized the firms by experience which directly contributes to "Superfund" practice - hazardous waste management, industrial waste treatment, groundwater movement (hydrogeology), industrial hygiene and laboratory services.

We have, in addition, identified firms who have general civil and environmental engineering experience in solid waste management. These firms, while not indicating the more specialized hazardous or industrial waste experience, draw their knowledge

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from two major activities. The one is the management of municipal waste through collection transfer and disposal, primarily through landfilling. The other is the energy and materials separation and recovery from municipal waste and the design of boilers and incinerators. These constitute a base of firms with related experience who when teamed with firms with a hazardous waste clean-up track record will provide a means of transfer and expansion of hazardous waste management, technology, to meet the needs of an expanded program.

The raw numbers of available of firms and skills, however, does not convey a qualitative measure of the industry's capacity. Geographic distribution is also significant because familiarity with local conditions physically, economically and institutionally will provide advantages to solving complex Superfund clean-ups. The distribution and concentration of engineering firms with industrial and hazardous waste management experience matches the concentration of sites in the NPL. The greatest resource concentrations of experienced firms based on our quick review of identified skills matches the concentration of NPL sites in California, Colorado, Florida, Michigan, Missouri, New Jersey, New York, Texas and Washington. (See attached chart).

The capacity of the engineering community to respond to the demand and growth of the Superfund program, however, is constrained by factors which are not resource-specific. These factors are primarily institutional and managerial. They are also inherent in the law, which has to this point focused effort on the identification of responsibility for disposal of hazardous wastes and the apportionment of liability to provide restitution to the funds, rather than the crafting of solutions and the application of technology to site clean-ups. We will briefly comment on these constraints. We feel that these constraints define the availability of resources, rather than the raw numbers of firms and skills. The removal of these constraints, thereby, increases availability or effective capacity of the engineering community to respond.

Engineering Responsibility

Attainment of the objectives of the Superfund program are critically dependent on the quality of site assessments, design and other engineering services. The complexity of options for treatment at these sites and the potential for harm to public health from release of chemicals off the site, as well as to the employees of engineering firms, construction companies and others involved, require that engineering firms be free to exercize their best professional judgment. The quality of that judgement and indeed the very existence of the firm are jeopardized by the potential for claims and lawsuits by third parties. The Superfund defines a strict liability standard for responsible parties. If engineering firms are to do their best work they must be distinguished from responsible parties and be liable only for their own negligence.

Firms must also be protected from technological second-guessing. The applied technology of engineering requires that the most effective technology, both as to results and cost, be chosen at a given point in time. The use of untried technologies which may appear effective in the abstract, but in reality have been tested by proper demonstration and field evaluation are not in the public's best interest. Therefore, the engineer should not be held liable for not using an untried, or even an unknown, technology in cleaning up a site, at a point years later when such technology has been tested and accepted.

Program Management

Federal and state management can also be a constraint on engi neering capacity. There is, particularly at the state level, a shortage of experienced program managers to oversee and make the critical decisions regarding clean up strategies, costs and disposal alternatives. These decisions are not the engineer's to make. The engineer's role is to evaluate and recommend strategies and then design the technologies chosen by federal and state regulatory officials. The effectiveness and efficiency of the decision management process is a critical part of the speed and progress of the Superfund program. As the states play a larger role under state cooperative agreements it will become more critical.

A parallel can be drawn from the EPA Wastewater Treatment Construction Grants program in the early 1970s. The progress of that program was bottlenecked in the decision making of the facility planning process. Many projects languished for years while facility plans were analyzed and redone, some many times. Since the planning, assessment and conceptual design activities are critical steps in the Superfund process, it is incumbent that the management of these decisions be given management priority if the program is to move forward and resources effectively used.

Selection and Procurement

The liability exposure and program management concerns raised above are conditioned by the procurement practices employed by EPA, the states, and major contractors. Liability exposure is mitigated when Superfund engineering and construction contractors are selected under procurement procedures that afford full and open competition and emphasize highest quality and fair and reasonable costs; under such conditions, ambiguities in scope of work and ultimately in construction specifications, can be minimized, through dialogue by and between designer, contractor and client. Program management is effectively improved, as all parties can more fully and clearly understand specific responsibilities, schedules and related requirements. In the selection of engineers, the use of procurement procedures included in P.L. 92-582 (40 U.S.C. 541 et seq.) is critical. Under these procedures, firms are first invited to submit technical qualifications and proposals; then, a "short list" of the most highly-qualified firms is developed and ranked; after completion of the ranking based on qualifications, negotiations are begun with the top-ranked firm, with the objective of achieving fair and reasonable costs.

This approach must be extended to federal engineering subcontractors as well. And while over two dozen states have procurement procedures that are comparable to P.L. 92-582, the requirement that these procedures should be followed for procurement of professional engineering services under state-cooperative agreements should also be extended under the Act.

Pricing and Cost Evaluation

Engineering firms have experienced pricing limitations in the negotiation of Superfund contracts, which limit quality and may affect availability. An example is the limitation on overhead imposed by the state of New York to 115% of direct labor. New York established a central procurement office for services using an overhead rate limit developed for highway design services. Because Superfund projects are of much higher risk, the cost of liability insurance alone pushed overhead well beyond the limit.

Another example relates to laboratory services. The state of Minnesota certified a number of in-state labs qualified to do analyses for Superfund samples. The EPA Region, we understand, reviewing the certification, however, discouraged the use of the labs because the cost per-sample was higher than the contracts EPA had with several large national laboratories. The lab pricing policy also tends to slow down the response time of Superfund analyses. The laboratories respond to private clients who pay higher sample prices first. Superfund samples are not top priority in workload. As a result of this situation, engineers have experienced delays waiting for sample results.

In conclusion, the experience of ACEC members on hazardous waste clean-ups is available to respond to federal, state and private programs. We believe the capacity of the industry to be more than adequate and it will grow based on the teaming of firms that occurs on these projects. In addition, the experience of firms with related skills is available as the constraints are removed and the practice of hazardous waste management becomes more certain.

We would be pleased to respond to any questions about this statement or the data supplied. We are also available to present testimony or brief members of the Sub-committee at any time during the reauthorization process.

Sincerely yours,

William J. Birkhofer
Managing Director
Governmental and
International Services

The CHAIRMAN. Congressman, as usual you are a persuasive witness. It would be my hope that this committee acts very soon. I plan to have a markup in May, and report it out. As you are well aware, we'll have an argument about this as a tax bill, and we've got to have something from the House to act on. But I have no intention of delaying this, and hope to have it out of this committee before the end of May.

Let me ask you just one question. Again, your testimony is very persuasive. I'm quite sure that the sentiment in this committee is to go beyond the recommendation of the administration in terms of amount. My hunch is that there is even reasonably strong support to go to the figure of the Environment and Public Works Committee here. I haven't surveyed the committee to find out if they want to go beyond that.

So we are talking about a significant increase in money in any event.

Are you familiar with the various broad-based tax mechanisms that any number of the members of this committee have proposed? Senator Chafee has a proposal. Senator Bradley has another. Senator Wallop and Senator Bentsen have another. But they are all variations on a theme of broad based. Do you have any views about any of them, or would any of them be satisfactory mechanisms for raising the amount of money we need?

Mr. FLORIO. The difficulty, if I can just share some observations—the difficulty with exclusive reliance upon broad-based taxes——

The CHAIRMAN. None of them are exclusive. I think all of them keep the feedstock tax, at least at their current rates, as I recall.

Mr. FLORIO. The difficulty with either exclusive or a substantial portion being raised by feedstocks are, quite frankly, the political problems of mobilizing a whole group of new, at this point, nonparticipants in the political discussions, who then would become participants.

I don't have any difficulty with the provisions that I've seen suggested. I suppose what I would offer as a compromise funding mechanism is a fixing of a number. Our perception, is the adequate number, is something like $10 billion. Within the fixing of the number, then you have a substantial portion of that number to be raised by a feedstock. My own thought is you should at least double the feedstock. I know on the House side I think we quadrupled it, and there are arguments being raised that that is a bit much. And that may very well have some validity. We have to at least double it.

We then should roll in the import tax that I talked about before. Imports on feedstocks, imports on feedstocks derivatives. And I think that will bring almost as much money as the feedstock provision. I think there is a need for a waste-end tax. The administration offered a waste-end tax that I think makes some sense in its provision, and is a bit bigger than the waste-end tax that we were talking about. There is a bit of controversy of the nature of the waste-end tax the administration is offering. But, again, I think that can make a fairly substantial contribution.

Next part would be a broad-based tax. There was an Arco proposal that was floating around last year. There are a number of other gross receipt type taxes, broad based taxes, for a fairly substantial component, but not so substantial that you do mobilize a large constituency out there that doesn't appreciate the significance of this bill having to be financed some way.

And then another piece—again, this is a very difficult issue to address—what the general Treasury will contribute. That under the existing law, the general Treasury contributes 12 percent of the total Superfund funds.

Last year on the House side we increased that 20 percent. I was not particularly supportive of increasing it to that degree. And, therefore, reluctantly in the spirit of compromise went along with that.

I would urge you to think about going back. And the concept of freeze is very politically palatable this year. Keeping 12 percent can be presented semilegitimately as a freeze. That's an attractive term. That may be something you want to do.

The administration's proposal, by the way, eliminates all public financing, any public general revenue Treasury part of this. So, you would almost have—what we did last year—the freeze at 12 percent or the administration's position, which is nothing.

Incidentally, I would throw out one other point about how this all flows with the budget deliberations and reconciliation. My understanding is that in the budget that has been passed by the Budget Committee, there is a freeze in a literal sense from what we had 4 years ago. That means you are talking about a $1.6-billion fund, which even CMA maintains is clearly inadequate.

So, I would be very cautious if the process is going to be budget and reconciliation. That somehow through that process, the substantive Superfund might attempt to be dealt with, and that is just something that I think all of us should regard as unacceptable.

The **Chairman**. Senator Bradley.

Senator **Bradley**. Thank you very much, Mr. Chairman. Mr. Chairman, I'm sure that you were right on target when you said that Congressman Florio's testimony was exceedingly helpful, and I think that it's easy to understand why he's the father of Superfund after today's testimony because I think he's got total command of the issues and it has been very enlightening. And I'd like to salute him for his work and leadership over the years on this issue.

The question I would like to ask is the Chairman's question: What's the source of the revenue to clean up the waste? And you enumerated a list of possible sources of revenue.

Putting aside the issue of politics, the issue of, well, does it make it more difficult or less difficult if we have this source or that source, could you go through the various funding sources and tell us whether you think that funding source has something directly to do with toxic waste, with the cleanup of toxic waste. I mean what difference does it make, for example, what the revenue source is as long as we have the money to clean up the toxic waste and as long as we are able to get that amount of money there on a semipermanent, if not permanent, basis?

I'd like to have you kind of think through for the committee. Is there a real difference between a feedstock tax—you know, you tax those things that are actually toxic—waste end—you try to discourage people from actually producing and having to dispose of it—broad based tax—there is just a lot of revenue there.

Go through with us in what you think in environmental terms the various funding sources mean for the program.

Mr. **Florio**. Well, there is a very loose analysis to be drawn that all of these tax systems have basic cause and effect relationships between the problem that we are trying to address, which is the universe of toxic waste dumpsites that were created prior to the new laws; that if they are implemented in an appropriate way, should allow for no new Love Canals to be created.

So, what we are talking about is dealing with a problem that's there and is not theoretically being expanded. The feedstocks tax, of course, was based upon, quite frankly, the ease of administrability in collecting it, but it was also based upon the fact that these chemical feedstocks—some in and of themselves are hazardous, and therefore, when we find them on a site, that's a direct linkage between cleanup and the need—the equity of charging money from those sources to clean up.

Most, if not many, of the feedstocks are clearly the building blocks out of which all toxic waste ultimately derives. So, there you have got the equitable argument, the cause-and-effect arguments for going after feedstocks.

Senator **Bradley**. So, the argument there is that if you tax the building blocks of toxic waste, it's less likely that in the future there will be as much produced. Is that the idea? Or have to pay a price to produce.

Mr. **Florio**. Well, the dollars will be increased. I think the industry—there are all kinds of other benefits. The industry is responding to the sense of cost now of disposing appropriately. And one of the things that Superfund, I think, has resulted in are many of the particularly good actors in the chemical industry are starting to reduce their waste production. They are going into waste disposal businesses. Dow, in a sense, has almost been the leader in high intensity incinerations for the disposal of their waste. And that's a good social and economic development.

Senator **Bradley**. I want to just interrupt because I see the light on and that means I only have one more question. And we don't want to keep you here all day.

I think you made the point I wanted you to make about the feedstocks. Now, you said that if the EPA spent at the level that it has been able to increase in the last 2 years, 40 percent each 2 years, that it would be $9.8 billion that they could spend over the next 5 years. Do you have reason to expect that they actually could increase 40 percent a year over the next 5 years?

Mr. **Florio**. Well, you almost have the conclusion that Mr. Thomas has appropriately obligated that amount. And, in fact, he has indicated to us that the hard work is going to start. The easy work, the preliminary feasibility, the preliminary design in engineering, certainly is much less cash intensive than the actual shovels in the ground construction remedial work at the end.

So, the answer is yes. And we have shown that this is not a radical departure. We assume that Mr. Thomas is doing a good job in this acceleration of obligating moneys. And I do assume that he's doing a good job. Just to play it out at the same level results in those numbers.

Senator **Bradley**. Thank you very much.

The **Chairman**. Senator Heinz.

Senator **Heinz**. Mr. Chairman, thank you.

Congressman Florio, I want to commend you on your usual articulate, hard-hitting, effective, and well researched statements, and I commend you on all the work you have done on this issue over the years. Had not been for you, I don't think that we would have been able to have moved S. 480, the Senate bill in 1980 that created the Superfund. I know it has meant much to your State and much to my neighboring State and there is an enormous job that remains to be done. Indeed, the job appears to get bigger each time we take a look at the facts.

Let me begin by asking whether you, when it comes to a choice between taxes, if we should decide that there is going to be some kind of waste-end tax, do you believe that it should be a wet weight or a dry weight tax?

Mr. **Florio**. I think it's clearly got to be a wet weight tax, which is—what has been proposed in the past is that the whole concept of waste-end tax is very iffy. The experience in many States that have waste-end tax—New York State is a good example—is that the projections as to the revenue it will bring in are very soft because we find that people decide not to go to the facilities where they are supposed to dispose when they find out they have got to pay a tax. The waste ends up some place else, probably inappropriate.

We made the decision 4 years ago, and we made the temporary decision last year, that the value of feedstocks is that it is certain. If you need the money, this is the certain way. And that at one point we talked about almost in a demonstration project way of putting a waste-end tax on designed and projected to get *x* amount of dollars. And you may even be able to reduce the feedstocks.

If the projected expectations were met, that's fine. You might even be able to give a tradeoff to the feedstocks people. On the other hand, the cost certainty and security of the financing level was absolutely essential. In the event that the projections of the waste end were not met, then that would mean that the feedstocks people would have to pick up the full slack.

I'm not adverse to a sliding system of that sort because of the absence of experience with waste end at the Federal level and the experience with waste end at the State level, which has not been universally good.

Senator HEINZ. But your basic argument in favor of the wet weight as opposed to dry weight is that a wet weight tax is more dependable, easier to forecast? Do I understand you correctly?

Mr. FLORIO. Yes; and over and above that I think there is also a legitimate environmental concern. Some would say you have got a lagoon and it's got toxic in it. And much of what's in it is also water. Well, you shouldn't be, in a sense, charging us from this toxic laden water. And, of course, if you have a leak in the lagoon and it's goes into the aquifer that pollutes the drinking water that you are going to have to clean up, the pollution doesn't make distinctions between the toxics that are in it and the water ladden toxics and the water in the pollution.

So, I think there are a lot of arguments that justify dealing with solid waste end on a wet basis.

Senator HEINZ. Leaving pollution issue aside, are there any practical reasons favoring the dry weight tax over the wet weight tax? I have heard some people contend that it is very difficult to make the calculations and base some kind of reasonable schedule of taxation when you are dealing with wet waste.

Mr. FLORIO. Well, my only response is that I don't think there are insurmountable problems. In fact, the administration, EPA, has included in its proposal a wet waste system that one presumes—not to be unkind—but the administration has not been overly aggressive in these things. And if it satisfies the administration, that it is doable and it should be a very important component of their small package. That's persuasive to me that it can be done.

Senator HEINZ. Let's talk about broad-based taxes. I'm not asking you to come out in favor of a broad-based tax; but you know, we are going to have to decide what is the appropriate balance over here and you will be doing what you feel you have to do over there. There are really two basic approaches that have been discussed. Well, I should say there are really three.

I guess there aren't any. [Laughter.]

My time has expired.

The CHAIRMAN. Your timing is perfect.

Senator HEINZ. And, Mr. Chairman, I warn you, don't ask me to continue my question. Otherwise, it will go another 4 or 5 minutes.

The CHAIRMAN. I'm aware of that.

Senator HEINZ. You made that offer yesterday. I tried to tell the committee that it wasn't going to be cut and dry yet the committee was extremely polite. I don't wish to tempt fate twice in a row.

Mr. FLORIO. Mr. Chairman, I could probably short-circuit the time problem by saying I don't have too terribly much to say about the merits of the respective broad-based tax systems. We did not get into them in any detail in our committee, anticipating that we would work with the Ways and Means Committee, and for them to evaluate those relatively new initiatives that have only recently surfaced in a serious way.

Senator HEINZ. I thank you, Congressman Florio.

The CHAIRMAN. Senator Baucus.

Senator BAUCUS. Thank you, Mr. Chairman.

Jim, there's an article in this morning's Post stating that about 16 percent of Superfund dollars are spent in high priority cleanup sites. About half those funds are spent on administrative costs.

I was curious as to what your reaction was when you saw that article. Do you think it's true? And if it is true, do you think that's a problem? And if it's a problem, what do we do about it?

Mr. FLORIO. And the answer is that it's true, and it's true because the Superfund law that we passed in 1980 presumed that everyone would go forward in good faith to try to clean up things in an expeditious way. We know that for the first 2 years that was clearly not done. And now we have people there who are playing catchup ball, and that there are some deficiencies in the statute that we have to correct.

We've got to put people on schedule. And that is contained in our bill. We've got to give people guidance and in a sense remove the discretion that sometimes is used to do nothing. We've got to provide mandatory cleanup schedules so that people can evaluate what should be done and not be negotiating for long periods of time trying to figure out how clean is clean. So when we get down with this process, and we say we have spent *x* billions of dollars to clean up 2,000 sites, everyone will know that they are cleaned up to some objective, verifiable standard.

So what I'm saying, and what I said before, is that we need to extend; we need to expand this program. But we need to put some teeth into it that will insure that action is going to be taken.

Senator BAUCUS. Do the bills that are winding their way through the Congress have those teeth?

Mr. FLORIO. Yes. The House bill that passed last year and I think the Senate proposal was very much compatible with it have substantial new initiatives in terms of those areas of scheduling, in terms of toxic waste, studies for individuals; things of that sort.

Senator BAUCUS. So in your judgment, a higher percentage of the fund will be spent on cleanup, and a lower percentage of the consequence will be spent on administrative?

Mr. FLORIO. Well, it can't be a lesser percent on cleanup.

Senator BAUCUS. I meant a higher percent of the Superfund dollars will be spent actually cleaning up the sites.

Mr. FLORIO. If I could just recount history a little bit. Our major motivation last year in trying to get a bill passed last year, was to have it passed last year to give EPA this whole year before the new fiscal year starts on the 1st of October, to gear up for the rather substantial changes that we were putting into the law so they would be able to effectuate the program, or put the program into effect in a cost-effective way. It's going to be a little more difficult this time because if the bill gets passed at the end of this year, the 1st of October, they are going to have to do a 180 and change their methods. But be that as it may, the answer is I think that we are making structural changes in this program that will be beneficial to bring about more cleanup; do some things to help the private sector when they come forward in good faith to play a role in getting some of this cleanup done.

Senator **Baucus**. Thank you.

The **Chairman**. Senator Grassley.

Senator **Grassley**. No questions.

The **Chairman**. Senator Mitchell.

Senator **Mitchell**. I have no questions, Mr. Chairman.

I do want to commend Congressman Florio for the leadership he has displayed in this and other important environmental areas.

The **Chairman**. Are there any further questions of the Congressman?

[No response]

The **Chairman**. If not, Jim, thank you. I will see you Monday morning.

Mr. **Florio**. Thank you.

The **Chairman**. Next we have Senator Proxmire and Congresswoman Schneider.

It's my intention today to do the same as yesterday and run these hearings straight through until we finish, right through the lunch hour if need be.

Welcome.

STATEMENT OF HON. WILLIAM PROXMIRE, U.S. SENATOR, STATE OF WISCONSIN

Senator **Proxmire**. Thank you, Mr. Chairman.

Mr. Chairman, I appreciate the opportunity to appear before the Finance Committee to make the case for my bill, S. 886. Mrs. Schneider has introduced an identical bill in the House.

These bills establish a Federal tax on hazardous waste and uses proceeds to help finance the Superfund.

I know the committee has already heard testimony on this issue. I will try to be concise. I was delighted I was here to hear part of the testimony of Congressman Florio. He has been such a leader in this area.

Two years ago, the U.S. Office of Technology Assessments released a major report on the Federal Superfund Program. Among its findings, the report recommended enactment of a tax on the disposal of hazardous waste. The tax, according to OTA, would provide an economic disincentive of economic proliferation of landfills, service impoundments and injection wells that have contaminated ground water, ruined entire neighborhoods and jeopardized the public's health. The tax would also provide additional revenues for expansion of the national effort to cleanup abandoned waste sites.

EPA further strengthened the case for a waste-end tax with a report which found that this approach was administratively workable, promised significant revenues, and could be structured in such a way that it cut down on the huge volume of hazardous waste liquids that are now poured into open pits or injected into the ground in open deep wells.

As a consequence, the administration proposed a large waste-end tax be included as part of a reauthorized Superfund this year.

In 1983 Representative Schneider and I introduced the first legislation to establish a waste-end tax, and we have worked for its enactment ever since. This year, there are no fewer than seven waste-end tax proposals before the House and Senate.

The waste-end tax is not a new idea. The Europeans have been experimenting with pollution taxes for years. Perhaps that is why they are so far ahead of the United States in developing ways to destroy, recycle or detoxify hazardous waste. The July 1984 edition of Technology Review points out that:

> America's continued enthusiasm for disposal seems not only misguided, but downright mystifying. Moreover, when one observes how relatively simple, inexpensive and elegant are some of the techniques employed by our European competitors, Washington's emphasis on saving toxic landfills for future dumping appears profoundly inconsistent with our long-standing leadership in technology.

Mr. CHAIRMAN. The U.S. faces an historic opportunity to enact our first national pollution tax that encourages treatment and discourages the land disposal of hazardous waste. Congressman Florio, I thought, answered the question as to why this particular kind of incentive is so important.

We have already made a policy decision through environmental regulations to try to phaseout land disposal. A waste-end tax can move us faster toward that goal.

Our waste-end tax complements the regulatory framework in place under the Resource Conservation and Recovery Act. We propose a simple two-rate system which taxes deep well injection of wastes at $5 a wet ton and all other forms of land or ocean disposal at $20 a wet ton.

Treatment which renders waste non-hazardous such as recycling, incineration and neutralization would receive a full credit against the tax.

Our relatively modest tax rates would not impose a heavy burden on small business, but, according to EPA studies, they would provide a very real economic incentive for big generators of hazardous waste to cut down on their huge volumes of hazardous waste and dispose of them safely.

Our $286-million-a-year revenue estimates are extremely conservative as are the assumptions on which the estimates are based. In addition, our tax is automatically adjusted upward to compensate for any shortfalls in revenue.

Aside from their obvious money-raising and waste reduction and treatment advantages, waste-end taxes also increase regulatory efficiency.

Despite our best efforts, regulations are subject to delays, unanticipated legal interpretations and litigation to resolve varying loopholes. The waste-end tax would offer blanket coverage of all RCRA regulated hazardous waste disposal helping to close any hidden loopholes in the regulatory system. It will also provide needed information on hazardous wastes which EPA can use to fine-tune RCRA.

While I hope that the committee will include a waste-end tax as part of its overall Superfund financing package, such a tax must include real incentives to neutralize, recycle or incinerate hazardous waste. A flat, uniform tax on both treatment and land disposal squanders the economic incentives that are unique to our waste-end approach.

Why do I oppose this uniform, flat tax system?

There are three reasons. First, I think it's a grudging, half-hearted approach that undermines the very purpose of the waste-end, which is to discourage land disposal relative to safer forms of treatment.

Second, I believe it is an economic fallacy to insist that uniform tax rates treat all taxable parties equally. The flawed assumption is that all parties are equally capable of bearing the tax. In fact, the commercial land disposal industry is highly profitable—Chemical Waste Management, for example, is one of the fastest growing firms in the country. With its high profit margins, that company could swallow a token land disposal tax with no difficulty. The treatment industry, by contrast, is economically marginal in many instances. The capital and operating costs for treatment are much higher, and profits are consequently much lower. Even a relatively low waste-end tax could not be absorbed, and would have to be passed on to customers. Therefore, a uniform tax base could actually raise the cost of treatment relative to land disposal.

Finally, a flat waste management tax sends a confusing signal to industry, and perhaps to our courts over just what Congress intends with respect to treatment and land disposal. In fact, with the reauthorization of the Resource Conservation and Recovery Act of last year, we tried to distinguish between the two—we elected to ban land disposal, not treatment.

Mr. Chairman, thank you for the privilege of testifying. I'm honored to be here with Mrs. Schneider. And I assume her testimony will follow. In addition, I would like to include endorsement letters from the Environmental Policy Institute and the National Association of Solvent Recyclers to support our legislation.

The CHAIRMAN. They will be included with your statement. Thank you, Senator.

[The prepared written statement of Senator Proxmire and letters from the Environmental Policy Institute and the National Association of Solvent Recyclers follow:]

April 26, 1985

STATEMENT OF SENATOR WILLIAM PROXMIRE

Mr. Chairman, I appreciate the opportunity to appear before the Finance Committee to make the case for my bill, S. 886, which establishes a federal tax on hazardous waste and uses its proceeds to help finance the Superfund. I know the Committee has already heard testimony on this issue, so I'll try to be concise.

Two years ago, the U. S. Office of Technology Assessment (O.T.A.) released a major report on the federal Superfund program. Among its findings, the report recommended enactment of a tax on the disposal of hazardous waste. The tax, according to OTA, would provide an economic disincentive to proliferation of landfills, surface impoundments and injection wells that have contaminated groundwater, ruined entire neighborhoods and jeopardized the public's health. The tax would also provide additional revenues for expansion of the national effort to clean up abandoned waste sites.

EPA further strengthened the case for a waste-end tax with a report which found that this approach was administratively workable, promised significant revenues, and could be structured in such a way that it cut down on the huge volume of hazardous waste liquids that are now poured into open pits or injected into the ground in deep wells.

As a consequence, the Administration proposed a large waste-end tax be included as part of a reauthorized Superfund this year.

In 1983 Representative Schneider and I introduced the first legislation to establish a waste-end tax, and have worked for its enactment ever since. This year, there are no fewer than 7 waste-end tax proposals before the House and Senate.

The waste-end tax is not a new idea. The Europeans have been experimenting with pollution taxes for years. Perhaps that is why they are so far ahead of the United States in developing ways to destroy, recycle or detoxify hazardous waste. The July, 1984 edition of Technology Review points out that:

"America's continued enthusiasm for disposal seems not only misguided, but downright mystifying. Moreover, when one observes how relatively simple, inexpensive and elegant are some of the techniques employed by our European competitors, Washington's emphasis on saving toxic landfills for future dumping appears profoundly inconsistent with our long-standing leadership in technology."

Mr. Chairman, the U. S. faces an historic opportunity to enact our first national pollution tax that encourages treatment and discourages the land disposal of hazardous waste. We have already made a policy decision — through environmental regulations -- to try to phase out land disposal. A waste-end tax can move us faster toward that goal.

Our waste-end tax complements the regulatory framework in place under the Resource Conservation and Recovery Act. We propose a simple two rate system which taxes deep well injection of wastes at $5 a wet ton and all other forms of land or ocean disposal at $20 a wet ton.

Treatment which renders waste non-hazardous such as recycling, incineration and neutralization would receive a full credit against the tax.

Our relatively modest tax rates would not impose a heavy burden on small business, but, according to EPA studies, they would provide a very real economic incentive for big generators of hazardous waste to cut down on their huge volumes of hazardous waste and dispose of them safely.

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Why do I oppose this uniform, flat tax system? There are three reasons.

First, I think it's a grudging, half-hearted approach that undermines the very purpose of a waste-end tax, which is to discourage land disposal relative to safer forms of treatment.

Second, I believe it is an economic fallacy to insist that uniform tax rates treat all taxable parties equally. The flawed assumption is that all parties are equally capable of bearing the tax. In fact, the commercial land disposal industry is highly profitable -- Chemical Waste Management, Inc. is one of the fastest growing firms in the country. With its high profit margins, that company could swallow a token land disposal tax with no difficulty. The treatment industry, by contrast is economically marginal in many instances. The capital and operating costs for treatment are much higher, and profits are consequently much lower. Even a relatively low waste-end tax could not be absorbed, and would have to be passed on to customers. Therefore, a uniform tax rate could actually raise the cost of treatment relative to land disposal.

Finally, a flat waste management tax sends a confusing signal to industry -- and perhaps to our courts -- over just what Congress intends with respect to treatment and land disposal. In fact, with the reauthorization of the Resource Conservation and Recovery Act last year, we tried to distinguish between the two -- we elected to ban land disposal, not treatment.

Mr. Chairman, thank you for the privilege of testifying. I would be pleased to answer questions after Mrs. Schneider has testified.

In addition I would like to include endorsement letters from the Environmental Policy Institute and the National Association of Solvent Recyclers in the record at this point.

ENVIRONMENTAL POLICY INSTITUTE

April 18, 1985

Hon. William Proxmire
U.S. Congress
Washington, D.C. 20510

Dear Senator Proxmire,

The nation's struggle to clean up the more than 800 National Priority List hazardous waste dumps is hampered by the Program's slow pace and its rapidly escalating costs. However, our society has no choice but to face the task and complete it as quickly as possible while we regulate industry's disposal practices to assure the problems do not expand. The Hazardous Waste Reduction Act which you introduced will accomplish those goals.

By taxing the disposal of wastes at rates which encourage treatment or recycling alternatives, your proposal will increase the revenues flowing into the Trust Fund while diminishing the amount of wastes being discarded. When the wet-weight-based tax is in effect, its success will be measured by the diminishing revenues it raises. Rigid enforcement of the Resource Conservation and Recovery Act will assure that the reduced revenues are a direct result of generators shifting toxic wastes to treatment facilities and not illegally disposing them. As revenues from your waste end tax diminish, the shortfall can be made up by the establishment and gradual increase in the rate of a broad based tax on net receipts instead of increasing feedstock taxes.

As the Superfund Program increases in scope and funding level, the Agency's ability to manage that account will have to be demonstrated to the Congress and the Program's critics. Therefore, we recommend that a planned incremental growth be authorized into the statute. Since the President's FY86 budget includes a $280 million increase for the Program, an annual growth rate of $250 million thereafter would be a responsible and manageable expansion of the Superfund account. At that rate, the Program would grow to about $2 billion in FY91 and at a pace that the Congress could measure the Agency's ability to manage.

Your contribution to the Superfund debate is a careful approach to encouraging the shift of wastes to treatment and recycling facilities which will increase in number as generators find the increased cost of disposal working against their profit margins. We will urge the Senate to accept your proposal and look foreward to working with you in that effort.

Sincerely,

John L. McCormick

John L. McCormick
Washington Representative

218 D Street, S.E., Washington, D.C. 20003 (202) 544-2600

NASR
National Association of Solvent Recyclers
1333 New Hampshire Avenue, N.W. Suite 1100
Washington, D.C. 20036 202/833-1294

April 17, 1985

The Honorable William Proxmire
The United States Senate
530 Senate Dirksen Office Building
Washington, D.C. 20510

Dear Senator Proxmire:

The members of the National Association of Solvent Recyclers (NASR) would like to recognize and extend our appreciation regarding the introduction of "The Hazardous Waste Reduction Act of 1985."

Your legislation is identical to NASR's goals--to promote incentives to recycle or recover hazardous waste as an alternative to disposal. NASR has been watchful of all waste-end tax language and its effect on solvent recyclers. Up to now, proposed waste-end taxes did not clearly exclude the solvent recycling industry.

Enclosed is the Association's newsletter announcing the legislation, and a copy of NASR's Greenbook membership listing.

If NASR can be useful in providing testimony or statistics to support your legislation, please contact me at the address above.

Sincerely,

Faith Gavin Kuhn

Faith Gavin Kuhn
Executive Director/Editor

Enclosures

STATEMENT OF HON. CLAUDINE SCHNEIDER, U.S. REPRESENTATIVE, STATE OF RHODE ISLAND

The **CHAIRMAN**. Congresswoman Schneider.

Mrs. **SCHNEIDER**. Well, Senator Proxmire, I believe, has given a very eloquent argument for an incentive based waste-end approach. And as he indicates, it is supported by a number of outside organizations, such as the National Academy of Science, the Environmental Policy Institute, the Center for the Study of American Business, and the National Center for Legislative Research.

In the House of Representatives, we have 58 cosponsors on our bill and this is a bipartisan coalition attempting to promote the waste-end approach.

I'd like to take this opportunity to praise Senators Bentsen and Moynihan in their absence in the role that they have been pushing a waste-end proposal also in this body. And this particular proposal is supported by the chemical industry and is similar in many respects to the waste-end tax that we have introduced.

The Chemical Manufacturers Association approach incorporates many of the provisions that are absolutely necessary to build a waste-end tax that is both reliable and effective.

However, there is one major change in the CMA waste-end that I think should be considered by this committee if you are hopeful to create a tax that will meet its goals and its expectations.

The CMA bill would apply the waste-end tax only to the dry weight portion of the hazardous waste stream. While at first glance this may seem to be a fair calculation, it's my opinion, and the opinion of many different analysts, that a dry weight calculation will threaten the integrity of the waste-end tax base and also destroy incentives for proper waste management. And I think that is a particularly important consideration when we are trying to focus on a preventive approach.

I'd like to briefly elaborate on this. Insofar as the revenue reliability is concerned, I think it's important that estimates of the volume of waste that can be taxed be as accurate and as conservative as they can possibly be. This will ensure that the waste-end raises the revenue necessary to fill the desired contribution to the total Superfund package.

According to CMA, a dry weight tax will raise $307 million a year for Superfund. My staff and I have conducted a detailed analysis of the data on waste volume that was used to make this prediction. Without objection, Mr. Chairman, I'd like to ask to share this analysis with the members of the committee and enter it into the record.

[The analysis by Northeast-Midwest Institute and an article from the Cleveland Plain Dealer, 12, 9, 1983 follows:]

NORTHEAST
MIDWEST
INSTITUTE
THE CENTER FOR REGIONAL POLICY

DEEP WELLS
AND THE
WASTE-END TAX

An Evaluation of
Chemical Manufacturers Association's
Dry Weight Tax Proposal

Eric Schaeffer
Northeast-Midwest Institute
(202) 544-5200

April 1985.

Background

One of the critical issues in designing a waste-end tax is estimating the volume of hazardous waste that would be subject to taxation. Estimates of taxable volume should be as accurate -- and as conservative -- as possible.

The Chemical Manufacturers Association (CMA) has proposed assessing the tax on the "dry-weight" of hazardous wastes. Dry weight is measured by subtracting the free water contest of waste. At issue is the accuracy of CMA's projection of the dry-weight volume of waste that would be subject to tax.

CMA has acknowledged that one of its primary purposes in proposing the dry-weight formula is to minimize the impact of the tax on wastes injected into underground wells. CMA's projection of revenues from a dry-weight tax on deep wells is contradicted directly by data from CMA's survey of its member companies. In fact, the survey data show that with respect to deep wells the dry-weight tax would raise a little more than half the revenues projected by CMA. The resulting shortfall could cost the Superfund program as much as $220 million over the five-year lifespan of the tax.

CMA Projection

CMA estimates a total of $307 million in revenues per year from its $50 per ton dry-weight tax proposal. Approximately one third of the revenue -- $106 million per year -- would come from deep wells, assuming that deep-well wastes average 6 percent dry weight. Deep-well revenues are calculated as follows:

Deep-Well/ Wet-Weight (million tons)	Percent Dry Weight	Total Annual Dry Weight Volume (million tons)	Tax Rate	Annual Revenues (millions of dollars)
35.26	6	2.12	$50	105.76

CMA Survey

CMA's estimate is flawed seriously by the inclusion of state-regulated wastes -- which are exempted explicitly from the federal tax -- in the tax base. The dry-weight of state-regulated waste is approximately 11.4 percent. Federally regulated (RCRA) waste, in sharp contrast, averages a dry-weight content of 3.5 percent. Relevant data from the CMA survey are presented below:

	Wet Weight (tons)	Dry Weight (tons)	Percent Dry Weight
RCRA	12,570,040	436,974	3.5
State	2,188,123	248,615	11.4
TOTAL:	14,758,163	685,589	4.6

(The survey reflects data from 93 CMA member companies covering 60 percent of the Association members' plants.)

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CMA Projection vs. CMA Survey Data

The discrepancy between the CMA projection and its survey data suggest that adoption of the dry-weight formula would lead to a revenue shortfall of $44 million per year, or $220 million over the five-year life of the tax. The shortfall is calculated by multiplying the dry-weight of RCRA-regulated hazardous waste by the proposed tax rate of $50 per dry weight ton:

Deep-Well Wet Weight (million tons)	Percent Dry Weight	Total Annual Dry Weight Volume (million tons)	Tax Rate	Revenue (millions of dollars)
35.26	3.5	1.23	$50	$61.5

CMA's estimate of the dry-weight of wastes disposed through other management forms -- such as surface impoundments and landfills -- also appear to be based on data that lump nontaxable state waste together with taxable federal wastes. **Thus the CMA dry-weight projections for other forms of disposal may be flawed by the same discrepancy that plagues the deep-well estimates.** However, CMA survey data provide no specific information that would support or refute this hypothesis.

Solution

The solution -- included in both the Schneider-Wyden and the administration-proposed waste-end tax -- is to base the tax on the wet weight of hazardous waste. Four compelling arguments support this position:

- **Revenues from a wet-weight tax are inherently more predictable.** Industries are required already by RCRA to report volumes of hazardous waste on a wet-ton basis, and this data have been gathered in a national survey conducted by EPA. As the discrepancy outlined above suggests, taxing on a dry-weight basis adds an element of uncertainty to the waste-end tax.

- **An EPA study found that a dry-weight tax would be more expensive and complex to administer.**

- **Underground injection is not an inherently safe form of land disposal.** The trade magazine "Chemical Week" has warned that the consequences of a system failure -- the contamination of groundwater that could be virtually impossible to contain -- would be "horrendous."

  Accidents have plagued deep well operations in a number of states, notably Pennsylvania, Ohio, and California (see attachments). The rupture of a deep well in Presque Isle, Pennsylvania, is thought to have caused the discharge of waste directly into Lake Erie. The Presque Isle well has been placed on the Superfund National Priority List for cleanup.

- **Liquid wastes in general are more mobile, more liable to move into groundwater, and less susceptible to containment through land disposal.** One of the primary purposes of a waste-end tax should be to complement the RCRA program's emphasis on reducing the enormous volumes of liquid wastes disposed of in the land. A dry-weight tax undermines this basic policy goal.

For further information, call
Eric Schaeffer at the Northeast-Midwest Institute, (202) 544-5200

WASTE-END TAX RATES REQUIRED TO RAISE THE $300 MILLION/YEAR

CASE I: TAX DISTRIBUTION OF SINGLE TAX RATE PER DRY WEIGHT TON DISPOSED

Method of Disposal	Amount[1] (MM Ton/yr)	Dry Weight[2] Content (%)	Dry Weight (MM Ton /year)	Tax (MM $/yr)	Percent of Tax
Underground Injection	35.26	6	2.12	105.76	34.6%
Surface Impoundment	20.94	6	1.26	62.81	20.6%
Landfill	3.31	75	2.48	123.98	40.6%
Other	0.52	50	0.26	12.95	4.2%
	60.01[3]		6.11	305.5	100%

$$\text{Tax rate} = \frac{\$\ \text{needed}}{\text{ton/yr.}} = \frac{\$300\ \text{million/yr.}}{6{,}11\ \text{million ton/yr.}} = \$49.10/\text{ton}$$

Advantage: Dry weight tax spreads the tax burden in an even-handed manner over the three major disposal methods.

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[1] U. S. Environmental Protection Agency's National Survey of Hazardous Waste Generators and Treatment, Storage, and Disposal Facilities regulated under RCRA in 1981 (April, 1984)

[2] Estimate based on typical free-water content values.

[3] 60.01 million tons/year = 54.55 million metric tons/year.

SOURCE:
Chemical Manufacturers Association

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SUMMARY OF
DISPOSAL BY UNDERGROUND INJECTION FOR 1983
(Tons)

	On-Site	% Total	Off-Site Company-Owned	% Total	Commercial	% Total	Total	% of Grand Total
As-Is Basis								
Long Form								
RCRA[1]	10,341,517	99	0	0	72,568	1	10,414,085	71
State[2]	1,531,171	100	0	0	3,925	<1	1,535,096	10
Short Form								
RCRA	2,125,777	99	942	<1	29,236	1	2,155,955	15
State	651,206	100	0	0	1,821	<1	653,027	4
Totals								
RCRA	12,467,294	99	942	<1	101,804	1	12,570,040	85
State	2,182,377	100	0	0	5,746	<1	2,188,123	15
Grand Total	14,649,671		942		107,550		14,758,163	
Dry Tons Basis[3]								
Long Form[4]								
RCRA	357,169	99	0	0	4,864	1	362,033	53
State	173,997	100	0	0	421	<1	174,418	25
Short Form[5]								
RCRA	73,892	99	33	<1	1,016	1	74,941	11
State	73,990		0	0	207		74,197	11
Totals								
RCRA	431,061	99	33	<1	5,080	1	436,974	64
State	247,987	100	0	0	628	<1	248,615	36
Grand Total	679,048		33		6,508		685,589	

---

[1] RCRA wastes are those materials considered hazardous under the Resource Conservation and Recovery Act of 1980 (40 CFR 261).

[2] State wastes are additional materials considered hazardous by individual states which have elected to apply more stringent definitions of "hazardous" than defined under RCRA.

[3] Dry tons should be interpreted as water-free tons.

[4] Long form dry tons are based on actual survey data.

[5] Short form dry tons are estimated based on the reported total solids content of the long form data. The dry weight/wet weight ratios for RCRA and state long form data were applied to short form "as-is" tons to obtain the short form dry ton estimates.

SOURCE:
The CMA Hazardous Waste Survey
For 1983: Final Report

HIGH PRESSURE INJECTION OF HAZARDOUS LIQUIDS

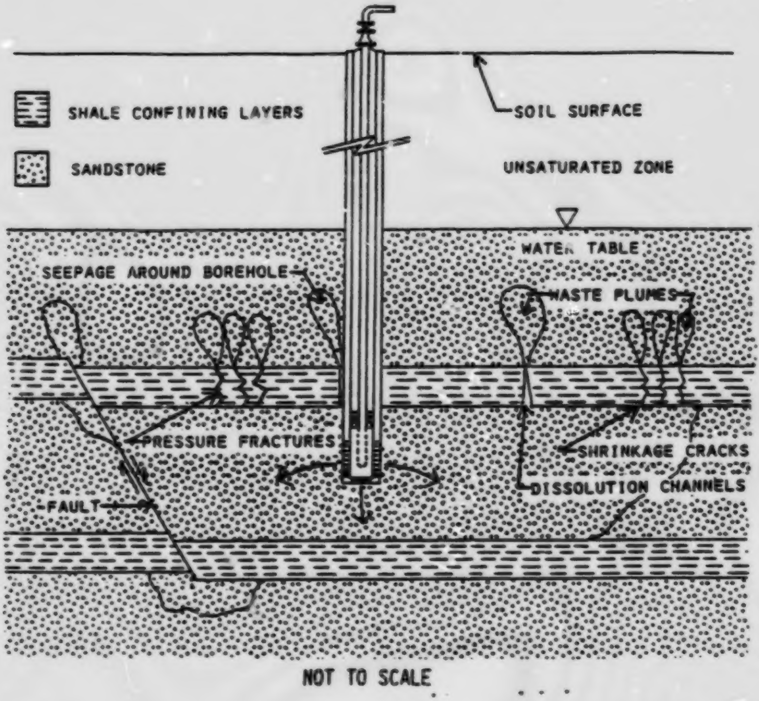

SHALE CONFINING LAYERS
SANDSTONE
SOIL SURFACE
UNSATURATED ZONE
WATER TABLE
SEEPAGE AROUND BOREHOLE
WASTE PLUMES
PRESSURE FRACTURES
SHRINKAGE CRACKS
DISSOLUTION CHANNELS
FAULT
NOT TO SCALE

FIGURE I. FAILURE MECHANISMS IN CONFINING LAYERS INCLUDE PRESSURE FRACTURING, SEEPAGE ALONG THE WELL BORE OR THROUGH NAT-FAULTS, DISSOLUTION BY ACIDS OR BASES, AND SHRINKAGE CRACKING DUE TO EXPOSURE TO ORGANIC LIQUIDS OR SALT BRINES (ANDERSON AND FRENTRUP, 1984).

SOURCE:
David C. Anderson
K. W. Brown & Associates, Inc.
September, 1984

INJECTION WELL MISHAPS

LOCATION	WASTE	MISHAPS
DENVER, COLORADO	PESTICIDE WASTE FROM A PETROCHEMICAL PLANT	TRIGGERED EARTHQUAKES
ERIE, PENNSYLVANIA	SULFITE LIQUORS pH 3.3 FROM A PAPER MILL	WELL CASING AND TUBING BLEW OUT, 140 GPM OF WASTE RETURNED TO SURFACE FOR SEVERAL DAYS. YEARS LATER AND 4.6 MILES AWAY, AN ABANDONED GAS WELL BEGAN DISCHARGING LARGE VOLUMES OF WASTE FOR 2 YEARS
PENSACOLA, FLORIDA	NITRIC ACID, SALTS AND NUMEROUS ORGANICS FROM NYLON PLANT	PRESSURE INCREASE OVER 30 MI. AND WASTE MIGRATED OVER 1 MI. IN ALL DIRECTIONS - PROBABLE FORMATION OF LARGE UNDERGROUND CAVITY
BELLE GLADE, FLORIDA	HOT, ACIDIC AND HIGHLY ORGANIC WASTE FROM A SUGAR MILL	WASTE MIGRATED UPWARD TO BOTH DEEP AND SHALLOW MONITORING WELLS—ALL WASTE WAS FOUND TO BE EXITING THROUGH TWO 6 FT HOLES IN WELL CASING
WILMINGTON, NORTH CAROLINA	WASTE FROM PRODUCTION OF DIMETHYL TEREPHTHALATE, pH OF 4.0	VERTICAL LEAKAGE OF THE WASTE THROUGH CONFINING LAYER INTO OVERLYING AQUIFER
MULBERRY, FLORIDA	ACIDIC WASTE	DISSOLUTION OF INJECTION ZONE AND LEAKAGE THROUGH CONFINING BED
CORPUS CHRISTI, TEXAS	PETROCHEMICAL WASTES	WASTE LEAKED INTO OVERLYING AQUIFER
RANGER, TEXAS	SEVERAL HAZARDOUS WASTE STREAMS	BACKFLOW OF WASTE TO SURFACE AFTER WELL BLOWOUTS
SULPHUR, LOUISIANA	SEVERAL HAZARDOUS WASTE STREAMS	CASING LEAKS
DEER PARK, TEXAS	SEVERAL HAZARDOUS WASTE STREAMS	UNAUTHORIZED INCREASE IN INJECTION RATE, TUBING LEAK

SOURCE:
David C. Anderson
K. W. Brown & Associates, Inc.
September, 1984

PRESQUE ISLE

Erie, Pennsylvania

The Presque Isle Site is located in the City of Erie, Erie County, Pennsylvania. Beginning in 1964 and continuing to 1972, the Hammermill Paper Company injected, under high pressure, over 1 billion gallons of papermaking wastes into deep underground aquifers, ranging in depth from 1,600 feet to 3,000 feet. The Pennsylvania Department of Environmental Resources (DER) discovered a discharge of foul smelling liquid from an abandoned gas well at the State Park on Presque Isle, more than 4 miles from the injection site. The DER has stated that a reasonable cause and effect relationship exists which links the foul smelling discharge to the Hammermill injection program. It appears that the abandoned well is acting as a conduit for the injected wastes to rise to the surface. The U.S. Environmental Protection Agency and the U.S. Geologic Survey are concerned that similar discharges may be rising in other abandoned wells and causing groundwater pollution at various points over a wide geographic area.

SOURCE:
Environmental Protection Agency
(Description of Sites on Superfund
National Priority List)

Ohio EPA closes 5 waste wells

By James Lawless

The Ohio Environmental Protection Agency closed five of six underground disposal wells at a hazardous waste site near Fremont yesterday, after discovering that all six wells were leaking.

Ohio EPA also referred the problem to the state attorney general for legal action against Ohio Liquid Disposal, which operates a hazardous waste disposal company and recycles waste oil.

"Only well No. 3 can be operated and that only for testing," said Patricia Madigan, an Ohio EPA spokesman. "They have no permission to inject waste into any other well, and they have no assurance that they will have permission at any future date."

Leaks in the wells were discovered by a consultant, Underground Resources Management of Austin, Tex., which was selected by Ohio EPA and is being paid by Waste Management Inc., the parent company of Ohio Liquid, to test the security of the wells.

Madigan said Robert Maynard, Ohio EPA director, did not ask the attorney general to close Ohio Liquid, but said "substantial civil penalties are in order in this case" because of the leaks.

Madigan said there are potential violations of both the safe drinking water act and hazardous waste regulations. Hazardous waste violations can result in fines of up to $10,000 a day each, Madigan said.

Don Reddicliffe, a Waste Management spokesman in Chicago, said one of the six wells has been repaired and is being tested. "This shows the company is moving forward on the rehabilitation of the site," he said.

Maynard said the repairs to the well being tested by the consultant were not approved by Ohio EPA and "I don't know if they were pouring money down a rat hole or not."

Asked if Waste Management expected the leaks, Reddicliffe said, "The question is whether the leaks were identifiable and, if they were, why they were not found."

The site has been a problem since March, when its former chief chemist reported numerous violations and the company found about 1 million gallons of PCB-contaminated waste oil. Subsequently, hazardous dioxins were found.

Ohio EPA shut the site this spring and ordered the company to stop handling waste oil. It ordered the PCBs and dioxins cleaned up.

After several leaks were found in wells, Ohio EPA ordered a review of all the wells in September. Maynard released information on the six leaks found by Underground Resources, which is expected to have a full report on the site in January.

Madigan said there are few details of the amount of hazardous chemicals leaking from the wells, but said all leaks were reported at a level between 2,400 to 2,700 feet underground, well below the source for drinking water. Some of the leaks were reported to be small.

She said the wells are supposed to inject wastes into an area about 2,900 feet below ground. Underground Resources reported that the waste appeared to be contained in an average radius of about 500 feet from the wellhead

SOURCE:
Cleveland Plain Dealer
December 9, 1983

Mrs. **Schneider.** The analysis shows that inaccuracies in measuring the dry weight portion of waste that is eligible for taxation could cost the Superfund Program $220 million over the 5 year lifespan of the tax. This shortfall would hamper the ability of Superfund to meet the rigorous cleanup schedules already established by the Environment and Public Works Committees.

The second point I would like to elaborate on are some of the distorted incentives for proper waste management. As Senator Proxmire mentioned in his statement, one of the primary goals of last year's RCRA amendments is to reduce the enormous volumes of liquid waste that are currently being disposed of in the land. A waste-end tax would work in conjunction with existing regulations to accelerate the trend toward recycling and away from land disposal.

A dry weight waste-end would essentially ignore the liquid waste that is disposed in underground injection wells. Sixty percent of all hazardous waste that is land disposed is injected into wells and they have not been determined to be a safe disposal technology. Accidents have plagued deep well operations in a number of States, notably, Senator Heinz, your State of Pennsylvania; also Ohio and California, and a number of others. The trade magazine Chemical Week has also warned that underground contamination from leaking disposal wells could pose horrendous consequences. In fact, Chemical Waste Management, Inc. last year sustained a near record $10 million fine from the State of Ohio after wastes were discovered leaking from a deep well in Vickory, OH.

Given the congressional sentiment to move away from all types of land disposal, I believe it's counterproductive and inconsistent to enact a dry weight tax, which at the rates proposed by CMA would result in less than $1 wet-weight equivalent tax on the major form of land disposal.

This is especially short-sighted given the fact that EPA studies suggest that a slightly higher $5 a ton wet-weight tax would cause industry to treat 25 percent of the waste that is being currently injected underground. A handful of companies have already made the shift from underground injection to treatment out of concern for the long-term safety of underground injection wells. A relatively small wet-weight tax on deep wells will encourage more firms to shift to comparable priced, on-site treatment technologies. If we are going to promote an incentive-based tax, it is logical to place the incentives where they can actually change industry behavior.

I would also like to elaborate a little bit based on some of the questions already asked of Mr. Florio on the administrative feasibility of this wet waste-end tax.

According to EPA, a dry weight tax is expensive and more complex to administer. The mere cost of determining the dry weight content alone would place an unfair burden on small generators who are just coming into the RCRA system.

In short, a dry weight tax would create administrative problems, destroy incentives for safe waste management and threaten the revenue reliability of the waste-end tax. The way around these problems is to separate—is to administer the tax on a wet weight basis, and to provide a separate and lower tax rate for injected waste. It is this approach that has been incorporated into our waste-end legislation, and it is this approach that I recommend that the committee adopt.

The State experience, which was also mentioned by Congressman Florio, I think is very important to look at on how the tax would work then on a Federal level. Mr. Florio, however, mentioned an older GAO study in his analysis of the effectiveness on a statewide level.

A more recent study conducted by the Environmental Protection Agency indicates that in eight States, including New York and California, the survey has been very effective. In particular, six States the waste-end taxes had generated 71 to 98 percent of the projections. In two States, revenues were ahead of projections. For a perspective on that in comparing it to the Superfund feedstock tax, the feedstock taxes realized 78 to 84 percent of revenue projections during its 5-year lifespan.

So the waste-end proposal that Senator Proxmire and I have briefly outlined this morning incorporates, I believe, some of the best provisions of the various proposals that have been circulated over the last few months. Because the tax falls on disposal facilities, it is relatively easy to administer and also to collect.

Like the CMA-backed legislation, our proposal includes a tax structure which provides incentives for legitimate treatment technologies. Like the administration proposal it relies on a wet-weight financing mechanism to guarantee a stable flow of revenue into Superfund.

We strongly believe that this form of middle ground approach is the best way to ensure that the waste-end meets its legitimate goals. The waste-end tax cannot be a replacement for the feedstock tax, and it will also not force an overnight switch away from land disposal.

However, with the proper design, I believe that the waste-end tax can provide a very reliable supplemental stream of revenue for the Superfund. And the incentives to make it work with the regulations that are already in place in order to accelerate the move away from land disposal.

In short, Mr. Chairman, I think that the waste-end is an idea whose time has come. And I certainly hope that the committee as it reviews the various proposals will see fit to incorporate ours into the Superfund financing package.

Thank you very much.

The CHAIRMAN. Thank you.

[The prepared statement of Representative Schneider follows:]

THE WASTE-END TAX
AS A SUPPLEMENTAL FINANCING MECHANISM FOR SUPERFUND

U.S. REP. CLAUDINE SCHNEIDER (R-RI)

SENATOR PROXMIRE HAS GIVEN AN ELOQUENT ARGUMENT FOR AN INCENTIVE-BASED WASTE-END TAX. I SECOND HIS THOUGHTS AND ADD THAT SUPPORT FOR A WASTE-END EXISTS AMONG A WIDE VARIETY OF ORGANIZATIONS INCLUDING THE CENTER FOR THE STUDY OF THE AMERICAN BUSINESS, THE NATIONAL CENTER FOR LEGISLATIVE RESEARCH, THE NATIONAL ACADEMY OF SCIENCE, AND THE ENVIRONMENTAL POLICY INSTITUTE. IN THE HOUSE, OUR WASTE-END PROPOSAL HAS ATTRACTED A BIPARTISAN COALITION OF FIFTY-EIGHT COSPONSORS.

I WOULD LIKE TO PRAISE SENATOR BENTSEN AND SENATOR MOYNIHAN FOR THEIR ROLE IN PUSHING A WASTE-END PROPOSAL IN THIS BODY. THEIR PROPOSAL, WHICH IS SUPPORTED BY THE CHEMICAL INDUSTRY, IS SIMILAR IN MANY RESPECTS TO THE WASTE-END TAX THAT WE HAVE INTRODUCED. THE CMA APPROACH INCORPORATES MANY OF THE PROVISIONS THAT ARE NECESSARY TO BUILD A WASTE-END TAX THAT IS BOTH RELIABLE AND EFFECTIVE.

THERE IS, HOWEVER, ONE MAJOR CHANGE IN THE CMA WASTE-END THAT SHOULD BE SERIOUSLY CONSIDERED IF THE COMMITTEE IS TO CRAFT A TAX THAT WILL MEET ITS GOALS AND EXPECTATIONS

THE CMA BILL WOULD APPLY THE WASTE-END TAX ONLY TO THE DRY-WEIGHT PORTION OF THE HAZARDOUS WASTE STREAM. WHILE, AT FIRST GLANCE, THIS MAY SEEM TO BE A FAIR CALCULATION, IT IS MY OPINION, AND THE OPINION OF OTHER ANALYSTS, THAT A DRY-WEIGHT CALCULATION WILL THREATEN THE INTEGRITY OF THE WASTE-END TAX BASE AND DESTROY INCENTIVES FOR PROPER WASTE MANAGEMENT. I WOULD LIKE TO BRIEFLY ELABORATE ON THOSE THOUGHTS FOR THE COMMITTEE.

I. REVENUE RELIABILITY:

IN DESIGNING A WASTE-END TAX, IT IS VITALLY IMPORTANT THAT ESTIMATES OF THE VOLUME OF WASTE THAT CAN BE TAXED BE AS ACCURATE--AND AS CONSERVATIVE--AS POSSIBLE. THIS WILL ENSURE THAT THE WASTE-END RAISES THE REVENUE NECESSARY TO FULFILL ITS DESIRED CONTRIBUTION TO THE TOTAL SUPERFUND PACKAGE.

ACCORDING TO CMA, A DRY WEIGHT TAX WILL RAISE $307 MILLION A YEAR FOR SUPERFUND. MY STAFF AND I HAVE CONDUCTED A DETAILED ANALYSIS OF THE DATA ON WASTE VOLUME THAT WAS USED TO MAKE THIS PREDICTION. WITHOUT OBJECTION, I WOULD LIKE TO SHARE THIS ANALYSIS WITH THE MEMBERS OF THE COMMITTEE AND ENTER IT INTO THE RECORD. THE ANALYSIS SHOWS THAT INACCURACIES IN MEASURING THE DRY WEIGHT PORTION OF WASTE THAT IS ELIGIBLE FOR TAXATION COULD COST THE SUPERFUND PROGRAM $220 MILLION OVER THE FIVE YEAR LIFESPAN OF THE TAX. THIS SHORTFALL WOULD HAMPER THE ABILITY OF SUPERFUND TO MEET THE RIGOROUS CLEANUP SCHEDULES ESTABLISHED BY THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE.

II. DISTORTED INCENTIVES FOR PROPER WASTE-MANAGEMENT:

AS SENATOR PROXMIRE MENTIONED IN HIS STATEMENT, ONE OF THE PRIMARY GOALS OF LAST YEAR'S RCRA AMENDMENTS IS TO REDUCE THE ENORMOUS VOLUMES OF LIQUID WASTE THAT ARE CURRENTLY BEING DISPOSED OF IN THE LAND. A WASTE-END TAX WOULD WORK IN CONJUNCTION WITH EXISTING REGULATIONS TO ACCELERATE THE TREND TOWARD RECYCLING AND AWAY FROM LAND DISPOSAL.

A DRY WEIGHT WASTE-END WOULD ESSENTIALLY IGNORE THE LIQUID WASTE THAT IS DISPOSED IN UNDERGROUND INJECTION WELLS. SIXTY PERCENT OF THE WASTE THAT IS LAND DISPOSED IS INJECTED INTO WELLS, AND THEY

HAVE NOT BEEN DETERMINED TO BE A SAFE DISPOSAL TECHNOLOGY. ACCIDENTS HAVE PLAGUED DEEP WELL OPERATIONS IN A NUMBER OF STATES, NOTABLY PENNSYLVANIA, OHIO, AND CALIFORNIA. THE TRADE MAGAZINE CHEMICAL WEEK HAS WARNED THAT GROUNDWATER CONTAMINATION FROM LEAKING DISPOSAL WELLS COULD POSE "HORRENDOUS" CONSEQUENCES. IN FACT, CHEMICAL WASTE MANAGEMENT INC. LAST YEAR SUSTAINED A NEAR RECORD $10 MILLION FINE FROM THE STATE OF OHIO AFTER WASTES WERE DISCOVERED LEAKING FROM A DEEP WELL IN VICKERY, OHIO.

GIVEN CONGRESSIONAL SENTIMENT TO MOVE AWAY FROM ALL TYPES OF LAND DISPOSAL, IT IS COUNTERPRODUCTIVE AND INCONSISTENT TO ENACT A DRY-WEIGHT TAX, WHICH, AT THE RATES PROPOSED BY CMA, WOULD RESULT IN LESS THAN A $1 WET-WEIGHT EQUIVALENT TAX ON THE MAJOR FORM OF LAND DISPOSAL. THIS IS ESPECIALLY SHORTSIGHTED GIVEN THE FACT THAT EPA STUDIES SUGGEST THAT A SLIGHTLY HIGHER $5 A TON WET-WEIGHT TAX WOULD CAUSE INDUSTRY TO TREAT 25 PERCENT OF THE WASTE THAT IS CURRENTLY BEING INJECTED UNDERGROUND. A HANDFUL OF COMPANIES HAVE ALREADY MADE THE SHIFT FROM UNDERGROUND INJECTION TO TREATMENT OUT OF CONCERN FOR THE LONG-TERM SAFETY OF UNDERGROUND INJECTION WELLS. A RELATIVELY SMALL WET-WEIGHT TAX ON DEEP WELLS WILL ENCOURAGE MORE FIRMS TO SHIFT TO COMPARABLY PRICED, ON-SITE TREATMENT TECHNOLOGIES. IF WE ARE GOING TO PROMOTE AN INCENTIVE-BASED TAX, IT IS LOGICAL TO PLACE THE INCENTIVES IN A SITUATION WHERE THEY CAN ACTUALLY CHANGE INDUSTRY BEHAVIOR.

III. ADMINISTRATIVE FEASIBILITY:

FINALLY, ACCORDING TO EPA, A DRY WEIGHT TAX IS EXPENSIVE AND MORE COMPLEX TO ADMINISTER. THE MERE COST OF DETERMINING THE DRY-WEIGHT CONTENT ALONE WOULD PLACE AN UNFAIR BURDEN ON SMALL GENERATORS WHO ARE JUST COMING INTO THE RCRA SYSTEM.

IN SHORT, A DRY WEIGHT TAX WOULD CREATE ADMINISTRATIVE PROBLEMS, DESTROY INCENTIVES FOR SAFE WASTE-MANAGEMENT AND THREATEN THE REVENUE RELIABILITY OF THE WASTE-END TAX. THE WAY AROUND THESE PROBLEMS IS TO ADMINISTER THE TAX ON A WET-WEIGHT BASIS, AND TO PROVIDE A SEPARATE AND LOWER TAX RATE FOR INJECTED WASTE. IT IS THIS APPROACH THAT HAS BEEN INCORPORATED INTO OUR WASTE-END LEGISLATION AND IT IS THIS APPROACH THAT I RECOMMEND THAT THE COMMITTEE ADOPT.

IV. THE STATE EXPERIENCE WITH THE WASTE-END

IT IS IMPORTANT TO LOOK AT TH EXPERIENCE OF STATES WITH WASTE-END TAXES ALREADY IN OPERATION TO DETERMINE HOW THE TAX WOULD WORK ON THE FEDERAL LEVEL. LAST SUMMER, EPA CONDUCTED A SURVEY OF WASTE-END TAX PROGRAMS IN EIGHT STATES, INCLUDING NEW YORK AND CALIFORNIA. IN SIX STATES, WASTE-END TAXES HAD GENERATED 71 to 98 PERCENT OF PROJECTIONS; IN TWO STATES, REVENUES WERE AHEAD OF PROJECTIONS. FOR PERSPECTIVE, THE SUPERFUND FEEDSTOCK TAX HAS REALIZED 78 TO 84 PERCENT OF REVENUE PROJECTIONS DURING ITS FIVE YEAR LIFESPAN.

THE WASTE-END PROPOSAL THAT SENATOR PROXMIRE AND I HAVE BRIEFLY OUTLINED THIS MORNING INCORPORATES THE BEST PROVISIONS OF THE VARIOUS PROPOSALS THAT HAVE BEEN CIRCULATED OVER THE PAST FEW MONTHS. BECAUSE THE TAX FALLS ON DISPOSAL FACILITIES, IT IS RELATIVELY EASY TO ADMINISTER AND COLLECT. LIKE THE CMA-BACKED LEGISLATION, OUR PROPOSAL INCLUDES A TAX STRUCTURE WHICH PROVIDES INCENTIVES FOR LEGITIMATE TREATMENT TECHNOLOGIES. LIKE THE ADMINISTRATION PROPOSAL, IT RELIES ON A WET-WEIGHT FINANCING MECHANISM TO GUARANTEE A STABLE

FLOW OF REVENUE INTO SUPERFUND. WE STRONGLY BELIEVE THAT THIS SORT OF MIDDLE-GROUND APPROACH IS THE BEST WAY TO ENSURE THAT THE WASTE-END MEETS ITS LEGITIMATE GOALS.

THE WASTE-END TAX CANNOT BE A REPLACEMENT FOR THE FEEDSTOCK TAX. IT ALSO WILL NOT FORCE AN OVERNIGHT SWITCH AWAY FROM LAND DISPOSAL. HOWEVER, WITH PROPER DESIGN, THE WASTE-END TAX CAN PROVIDE A RELIABLE SUPPLEMENTAL STREAM OF REVENUE FOR THE SUPERFUND, AND IT WILL PUT IN PLACE SOME INCENTIVES TO WORK WITH REGULATIONS TO ACCELERATE THE MOVE AWAY FROM LAND DISPOSAL.

IN SHORT, MR. CHAIRMAN, WE BELIEVE THE WASTE-END IS AN IDEA WHOSE TIME HAS COME. WE HOPE THAT THE COMMITTEE WILL SEE FIT TO INCORPORATE IT INTO THE SUPERFUND FINANCING PACKAGE.

The CHAIRMAN. Just a couple of questions. First, to each of you.

In your tax proposals, you are clearly using the Tax Code in this case as a social incentive to reach a desired end, if I read it correctly. Is that right?

Senator PROXMIRE. That's correct.

Mrs. SCHNEIDER. Yes.

The CHAIRMAN. And you have no objection to using the Tax Code for a variety of worthwhile social purposes, then?

Senator PROXMIRE. Well, Mr. Chairman, I respect your position on this. I think that we should be very, very careful about it. I think that we have abused it in the past, and I think that's one of the reasons the tax code is as complex as it is. But I do think, of course, there are some provisions in the tax code that should persist. And in Senator Bradley's excellent bill, which I'm happy to cosponsor, he provides some social purposes, such as interest on first home and so forth.

So I think there are occasions where this can be used this way, and I think this is one of them.

The CHAIRMAN. You and I agree that it is a worthwhile purpose.

Senator PROXMIRE. That's correct.

The CHAIRMAN. Your waste-end proposal, as opposed to a variety of bills that members of the committee have introduced—I shouldn't say as opposed to because they may include some waste-end taxes also—but the generic broad based tax where we will collect the money and take care of it is not particularly using the Tax Code for an incentive. We are just saying it benefits the whole society so we will more or less tax the whole society and pay for the cleanup.

Senator PROXMIRE. That's right. And I think this is also a kind of a user fee matter. It's imposed on the people who put the waste into the ground. It's imposed on the people who have caused the public health hazard. And, of course, it does provide—and that's the principal reason why I support this—it does provide a clear incentive not to follow practices which affect the public health.

The **Chairman**. From the standpoint of this committee, I can't concede that this is a user fee or this committee loses all of its jurisdiction over this subject altogether. So it is not a user fee in any way, shape or form, never has been, never will be. [Laughter.]

Claudine, you have no objection to using the Tax Code for social purposes so long as we agree on the social purposes?

Ms. **Schneider**. Absolutely in agreement.

The **Chairman**. Now let me read a statement. This is the GAO study. "The General Accounting Office recently studied the experience with waste-end taxes in New York, California, and New Hampshire." It goes on to say they fell short. And then they say: "The revenue shortfalls in these States were 39 percent in California, 73 percent in New York and 93 percent in New Hampshire."

Is this study now a flawed study? You were saying that the information that you have is more recent, and this study is wrong?

Ms. **Schneider**. What the problem is that they fail to distinguish between the generator taxes and the disposer taxes in this particular study. In fact, the California disposer tax has never experienced more than 8 percent shortfall in revenue according to a report prepared by the GAO.

The **Chairman**. Is the same argument then true about the waste-end tax that supports the postclosure liability trust fund? It's only generated about 25 percent of its expected revenues.

Ms. **Schneider**. I believe that that is also the case.

The **Chairman**. Senator Chafee.

Senator **Chafee**. Thank you, Mr. Chairman.

First of all, I would like to welcome Congresswoman Schneider here. She has long been extremely active in this area; has made very fine contributions. It's been a long time concern of hers. And her thoughts and those of Senator Proxmire are extremely helpful on this matter.

It seems to me we are moving in a very important area, and now we are trying to raise the money to solve these problems. And for the sake of the committee, I would like to get before us a differentiation between waste-end or waste disposal which is one form of tax and the other is waste generation. Now the waste-end tax which you are proposing and waste disposal, you have very great, don't you, depending on what is done?

Mrs. **Schneider**. Yes.

Senator **Chafee**. And some of them are fairly high. In other words, through the Tax Code, you seek to encourage a disposal in this manner or this manner.

Mrs. **Schneider**. Well, there are two levels, as Senator Proxmire said in his testimony. It's a $20 rate and a $5 rate. And this tax is generated on land disposal; not on the generator of the waste.

Senator **Chafee**. And the waste generation tax is at a lower rate, and is nondiscriminatory as to how you do it.

Mrs. **Schneider**. We don't tax waste generation at all in our proposal. Not at all.

Senator **Chafee**. And that's the proposal that Senator Mitchell and I have. And we are going to have to work our way through these to see which is the best because there is, as in all situations—the testimony that we have come before us is not consistent.

For instance, yesterday we had testimony from the Sierra Club on behalf of the National Audubon Society. And then the National Resource Defense Council, the NRDC. And both of those, which are, of course, prominent environmental organizations, were not in favor of the waste-end tax in their testimony.

And as was said by Mr. Early of the Sierra Club on page —; well, he failed to number his pages. That is a severe fault. About page 6:

> An imposition of a waste-end tax merely adds a new set of financial stakes to the regulatory stakes associated with the listing or delisting decision. Thus, the waste-end tax and the RCRA amendments work against each other.

I, personally, am not sure just what we should do. Any help you can give us on this matter would be most beneficial to us as we try and work our way through this.

What do you say, Ms. Schneider, to that suggestion of Mr. Early? That the waste-end tax and the RCRA amendments work against each other. You see any validity to that?

Mrs. **Schneider**. No; I see absolutely no validity whatsoever to that because I believe that the waste-end tax compliments RCRA. RCRA provides for enforcement, and the waste-end tax provides an added incentive to comply with RCRA. And the other point, Senator Chafee, I would like to add is that when we are talking about, as we have several different options on the table here, when it comes to waste end, I think it's important to recognize the administrative possibilities of these approaches. And the one thing—very quick answer. For the disposal tax, there are less than 5,000 collection points. For the generation tax, we are talking about more than 130,000 collection points. And so just the administrative feasibility alone, I think, is something that should be considered in our wet weight approach and in the disposal tax approach.

Senator **Proxmire**. Could I add, Senator Chafee, that it's my understanding that the Audubon Society and the Sierra Club both support our legislation, but we will be happy to provide that documentation for the record.

[The documentation not available at press time.]

Senator **Proxmire**. Let me read just very briefly a short statement from the Environmental Policy Institute, which says this—it is dated April 18:

> By taxing the disposal of waste at rates which encourage a treatment of recycling alternatives, your proposal will increase the revenues flowing into the trust fund while diminishing the amount of waste being disgarded. When the wet weighted base tax is in effect, its success will be measured by the diminishing revenues it raises. Rigid enforcement of the RCRA will assure that the reduced revenues are a direct result of generators shipping toxic wastes to treatment facilities and not illegally disposing of them.

There's more, but that's just the position of that environmental organization.

Senator **Chafee**. Well, let me just say that my questions here are seeking information. I'm not opposed to what you say. We are just all of us seeking to find the best possible solution. And it may well be that the Audubon Society has a different position, but I'm just quoting from what their testimony was yesterday. They collaborated in this testimony of Mr. Early from the Sierra Club.

Thank you.

And thank you, Mr. Chairman.

The CHAIRMAN. Senator Bradley.

Senator BRADLEY. No questions, Mr. Chairman.

The CHAIRMAN. Senator Heinz and Senator Baucus are gone; Senator Grassley.

Senator GRASSLEY. I want to compliment both of you for your testimony. And particularly, Senator Proxmire for the point that he brought up about the European experience.

First of all, if you could give me any more information on that, or direct your staff to direct it to Julie on my staff I would appreciate it on the tax because it brings up the issue that is often brought up regardless of what tax might be proposed—end waste or the broad based tax or any of the taxes—of whether or not we are going to be competitive, and our industry will be competitive with competition from overseas. And I'm sure that you've had to think about that to a great extent. And so from that standpoint—and even though I'm addressing it to Senator Proxmire, if Congresswoman Schneider wants to respond, I would appreciate it—the extent to which your tax would or would not make our industries in this country competitive with European. And then I would also like to ask the extent to which we ought to be concerned just about European competition, because I don't know to what extent—market share they have.

Senator PROXMIRE. Well, West Germany, our second largest competitor, for example, in the chemical industry, treats over 60 percent of their chemical waste through incineration recycling or other forms of treatment rather than land disposal. We treat probably 5 or 6 percent of ours. So they, obviously, treat a good deal more and we know that they are highly competitive with us.

We dump nearly 90 percent of all chemical waste into landfills rather than detoxifying, recycling, or destroying hazardous waste. Furthermore, according to a study prepared by EPA, nearly 90 percent of hazardous waste generated in this country are disposed of on site. Denmark allows for less than 25 percent of its chemical waste to be treated through land disposal. This country generates nearly three times more toxic waste per citizen than does West Germany.

Now, the question you have asked, Senator Grassley, is a little different from the answer I'm giving you because I don't have all the facts on the competitive effects. But it seems to me that on the basis of the record, the Europeans have shown that when they have a tax of this kind, they apply their ingenuity to reducing their overall costs, including reducing a tax for recycling. And it has worked out well enough for them to do so while at the same time competing very effectively with us and with other countries.

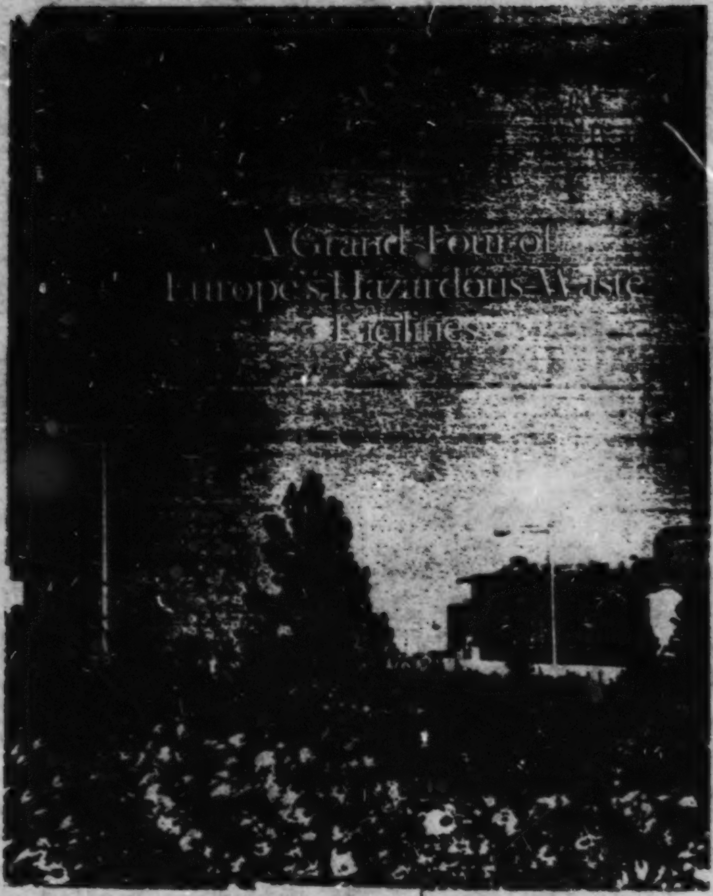
Senator GRASSLEY. Well, could you generalize the extent at least to which the European competition has to be considered as we establish tax policy here. That we could put on the tax you suggest and not make our industry uncompetitive.

Senator PROXMIRE. That's an excellent question. I am not prepared to give you the documentation on that. I will be delighted to provide it for you for the record.

Senator GRASSLEY. In writing.

Senator PROXMIRE. Yes; indeed.

[The documentation from Senator Proxmire follows:]



A Grand Tour of Europe's Hazardous-Waste Facilities

Washington's emphasis on securing toxic landfills for future dumping appears profoundly inconsistent with our longstanding leadership in technology.

waste and minimize the need for dumping. Although most forms of waste treatment produce small quantities of residues that must be disposed of in secured—that is, leakproof—sites, the net result is that the risk, waste volume, and overall costs to both society and its leading firms are greatly reduced.

This approach involves more than sophisticated technology. Governments in the Old World realize that reliable new techniques are essential for getting rid of wastes, but they also recognize the need for effective public policies to introduce and use those techniques rationally. The result, in several European countries, has been a creative combination of private and public enterprise that manages toxic wastes with a minimum of expense and red tape. The techniques have not avoided local protests entirely, but these incidents have not approached the scale of U.S. demonstrations against waste dumps.

A handful of forward-looking U.S. firms has struggled to put waste reduction, recycling, and advanced treatment technologies to work in this country. However, in contrast to the Europeans, the U.S. government has actually discouraged the use of these practices by favoring continued land disposal.

The European Example

Before dismissing the European techniques as more lead-into-gold fantasies that just won't work at home, consider these comparisons: While 80 to 90 percent of the hazardous wastes generated in the United States are still dumped directly into landfills or land-based facilities, 60 percent of West Germany's toxic wastes are detoxified instead of dumped. In Denmark, where 98 percent of the nation's drinking water comes from groundwater, virtually no untreated chemical wastes are disposed of on land. Instead, treatment technologies destroy or detoxify practically all of that country's most threatening wastes.

West Germany and Denmark lead the way in waste management. Yet other European countries are now designing chemical waste facilities that minimize, or aggressively phase out, land disposal of toxic pollutants. Sweden and Finland are borrowing heavily from the Danish example by constructing centralized high-tech treatment centers. Austria has a shining new centralized incineration and treatment facility, and is now developing a comprehensive regulatory scheme that will insure its use. In the Netherlands, the Chemical Waste Act of 1979 explicitly prohibited the dumping of a wide range of toxic wastes. The Dutch are planning a central treatment facility and promoting, through research and public education, the use of manufacturing technologies that produce less waste. And Norway, with fewer wastes than the industrial giants such as West Germany, is developing a decentralized set of technologies and management strategies. The Norwegians rely whenever possible on existing industrial facilities to destroy their toxic wates, and have led the world in the effort to retrofit cement kilns for high-temperature incineration of organic wastes.

In light of these efforts America's continued enthusiasm for land disposal seems not only misguided but downright mystifying. Moreover, when one observes how relatively simple, inexpensive, and elegant are some of the techniques employed by our European competitors, Washington's emphasis on securing toxic landfills for future dumping appears profoundly inconsistent with our longstanding leadership in technology.

Communal Waste Destruction

Denmark has joined the technical leaders through its Kommunekemi, or "community chemical" plant. Located near the town of Nyborg on the island of Funen, the facility stands at the geographical center of Denmark and functions as the centerpiece of its toxic-waste control system. Although Kommunekemi is a government-owned waste-management firm, it makes sizable profits from consulting with other countries. It also serves as a model for other nations in search of hazardous-waste solutions.

The core of the Danish system is a network of chemical-waste collection and transfer stations, situated throughout the Maryland-sized nation to lower transport costs as well as risks. The 21 industrial-waste transfer stations, located 20 miles or less from each of Denmark's major industrial firms, are owned and operated by the muncipalities in which they are located. Some of the stations operate a pickup service for industries in their area, sending out flatbed trucks to collect drums of wastes or tank trucks equipped with vacuum pumps to collect liquids and sludges.

Linked to these transfer stations is a network of more than 275 drop-off stations for poisonous household chemicals. For example, old medicines

The Danish government offers firms as much as a 15 percent subsidy on processes that reduce pollution at the source.

can be dropped off at pharmacies, dead mercury batteries can be delivered to places where new batteries are sold, and other household toxins such as paint thinners and pesticides may be delivered to certain paint shops. There they are sealed in government-approved containers and shipped to the nearest transfer station for transport to Kommunekemi. By bringing their household poisons to these stations, the citizens of Denmark perform a public service while reminding themselves of the toxic wastes that directly result from the products they purchase, use, and throw away.

The entire system feeds about 60,000 tons of used oil and chemical waste to the Kommunekemi plant each year for detoxification and destruction. Three rotary kiln incinerators at Kommunekemi destroy 50,000 tons of organic solvents, sludges, and oil wastes produced each year by Denmark's petrochemical, pharmaceutical, paint, and plastics industries. The remaining 10,000 tons of inorganic wastes are treated separately.

The rotary kiln incinerator is the workhorse of most European treatment plants, destroying organic wastes at temperatures in excess of 1,200° C with an efficiency of 99.9999 percent. These incinerators have four elements. The kiln, a long rotating metal cylinder over 10 feet in diameter, burns solids, sludges, and liquid waste directly or in their original contaminated drums. An afterburner insures complete combustion of gases from the wastes. A waste-heat boiler recovers heat from the hot exhaust gases. And an air-pollution control system cleans the exhaust gases. The incinerators at Kommunekemi generate about 30 tons of steam per hour. Fed into the district heating system of Nyborg, this steam provides 60 to 65 percent of the heating demand for the town of 12,000 people.

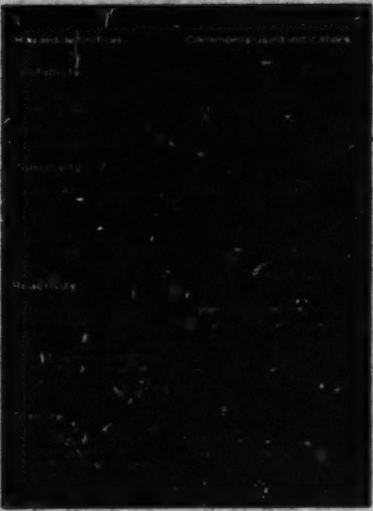
A series of chemical and physical processes at Kommunekemi detoxifies liquid inorganic wastes from the metal and electronics industries. These wastes are generally very acidic or basic and usually contain highly toxic cyanides and heavy metals, such as chromium, cadmium, and nickel. The treatment procedures, performed in tanks, destroy cyanides by oxidizing them with sodium hypochlorite, a common swimming-pool chemical. Other processes neutralize acids and bases, chemically reduce hexavalent chromium to a less toxic form, and precipitate heavy metals as insoluble solids, which are filtered out of the remaining liquid. This liquid is discharged to the city sewer system if its content of heavy metals does not exceed strict limits.

All that remain for disposal from both the incineration and inorganic treatment units are solid residues constituting less than 25 percent of the original waste volume. Because these residues are relatively nontoxic and are in a more immobile form, the risks they pose to the environment and public health have been greatly reduced. They are deposited in a special, solids only, landfill on the island about 15 miles from the plant.

Kommunekemi was built after passage of Denmark's chemical waste law in 1973. This pivotal act placed the responsibility for proper waste management at the city and county levels, thus maximizing a sense of local-responsibility for the proper treatment of wastes. Denmark's municipalities formed a consortium to finance construction of the Kommunekemi plant in 1975 by awarding it an interest-free loan, with repayment not starting until 1985.

The waste law requires companies to deliver all chemical wastes to the municipal transfer and collection stations unless they receive special permission to manage them on-site. After the wastes are delivered to Nyborg, all decisions on the proper management are made by the chemical engineers of Kommunekemi, subject to oversight by the National Environmental Protection Agency. This system forces all businesses to point their hazardous-waste decisions in the direction of destruction at the Nyborg facility.

Kommunekemi charges most companies for treating their wastes so it can recover all operating costs and repay capital costs. Charges range from about $30 per ton for processing some inorganic liquids to over $400 per ton for processing hard-to-burn chlorinated organic compounds such as PCBs, which cannot be safely burned in incinerators working at lower temperatures. However, Kommunekemi actually pays some generators for organic wastes with a high heating value, such as conventional waste oils. The interest-free, deferred-payment loan given Kommunekemi by the municipalities represents a significant initial subsidy for waste management. Concerned that the subsidies might discourage companies from decreasing the amount of waste they generate, the Danish government now offers firms as much as a 15 percent subsidy of the capital costs of in-plant modifications and new processes that reduce pollution at the source.


Hazard definition
Commonly used indicators
Reactivity

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Big Government Meets Big Business

Roughly the size of Ohio, the West German state of Bavaria generates the usual range of recalcitrant toxic wastes. About 150 thousand tons are taken each year to seven collection stations throughout Bavaria. There, wastes are significantly reduced in volume by a series of simple steps that include separating oil from water, neutralizing acids and bases, and thickening sludges for ease of transport. Then the wastes pass on to one of Bavaria's three major destruction facilities, such as the Ebenhausen incineration and treatment facility owned by the Gesellschaft zur Beseitigung von Sondermüll in Bayern. The twin stacks of the GSB (literally, "the company for management of special wastes in Bavaria") rise from thick barley fields not 30 miles from Munich.

There wastes confront either GSB's two rotary kilns or its inorganic treatment plant, both similar in design and efficiency to the Danish facility. GSB also recycles about 2,000 tons of waste solvents from the electronics and automobile industries each year at a plant near Munich. After distilling out the impurities in solvents, GSB can then resell them. Solid residues from the GSB incinerator and inorganic plants end up in the Gallenbach landfill about 30 miles from the Ebenhausen plant. In dread of future Love Canals, the Bavarians generally prohibit the dumping of hazardous liquids and untreated toxic wastes in any landfill within their state.

Distrusting private waste-management firms, Bavaria created GSB in 1970 as a partnership between state government and the industries that generate hazardous wastes. GSB is a statewide, nonprofit toxic-waste-management corporation. The chairman of the board is the Bavarian minister of environment; four other board members come from state government, three from industry, and three from local governments. Because of this balanced ownership and power, the GSB may prove more capable of making long-term investment and cost-benefit decisions than conventional corporations.

Yet government and industry do not always share ownership of waste-treatment facilities in Bavaria. One heavily industrialized district in the state, concerned about water pollution from hazardous-waste dumping, formed its own waste-management firm, the Zweckverband Sondermüllplätze Mittelfranken, (the "public special waste facility in Mittelfranken") or ZVSMM, in 1966. Serving 4,000 industrial firms, ZVSMM is wholly owned by the towns and counties of this district of 3.7 million people. The firm operates the Schwabach incineration and treatment facility, constructed in stages from 1968 to 1972, exclusively for chemical wastes generated within the district.

Whether jointly owned like GSB or owned and operated exclusively by government like ZVSMM, all treatment facilities in Bavaria are heavily subsidized by state funds. The state has contributed about $11 million to GSB out of a total investment of about $45 million. Waste-treatment charges ranging from $30 to $400 per ton enable GSB to recover both its operating costs and additional capital expenses. Until recently, the capital investments of ZVSMM were funded entirely by the towns and counties in Mittelfranken. However, the state of Bavaria will contribute 40 percent of the cost of a new incinerator for the Schwabach plant this year, on the theory that quality waste control requires significant investment from government.

Since high-tech waste treatment will always have difficulty competing with lower-cost inexpert handling, Bavaria regulates hazardous wastes stringently. The State Waste Plan requires that all chemical wastes be turned over to GSB or ZVSMM, unless firms obtain special permission to treat wastes on-site or to export them to another state or country. The Bavarian environmental agency oversees the en-

The lesson from Europe is that treatment facilities can virtually eliminate the need for land disposal of wastes.

tire operation at both GSB and ZVSMM, and it determines exactly what wastes can or cannot be disposed of in landfills.

Another German state, Hesse, also decided that government should be heavily involved in managing chemical wastes. HIM (the Hessischen Industriemüll, or "Hessian industrial waste") was formed in 1974, years before hazardous waste became an international concern. A nonprofit corporation owned 75 percent by 25 Hessian companies and 25 percent by the Hessian government, HIM is governed by a board with three government and eight industry votes. HIM has a monopoly on off-site management of chemical waste in Hesse, since it owns the Biebesheim incineration facility and two recycling and physical/chemical treatment plants near Frankfurt and Kassel. It also plans to construct a secure landfill in Mainflingen for treatment residues. These HIM facilities are closely monitored by the state environmental protection agency.

HIM's incinerator is West Germany's newest and most efficient waste-destruction facility. Opened in 1981, the plant is sandwiched between two refineries near the town of Biebesheim, not far from the Rhine River. Two rotary kiln incinerators burn up to 50,000 tons of organic wastes each year—including PCBs—in solid, liquid, and semisolid form. The incinerators are equipped with a novel scrubbing system that cleans the exhaust gases with liquid that is rapidly evaporated to leave only a dry, easily managed powder for disposal. Residues from this intense burning go to landfills outside Hesse or to underground salt mines at Herfa Neurode in Hesse, where they are stored far below the water table.

Although private industry constructed the original HIM facilities, the Hessian government now pays most of the cost of the new ones such as the Biebesheim incineration plant. The government will recover its investment through fees for waste treatment, raising charges over an extended period of time so that they are not burdensome. Nonetheless, current incineration prices are high—well over $500 per ton for certain highly hazardous chlorinated organics. The government suspects that these prices are tempting some Hessian companies to transport their wastes to other states or countries. Yet as the rest of West Germany upgrades its rules, such loopholes will close.

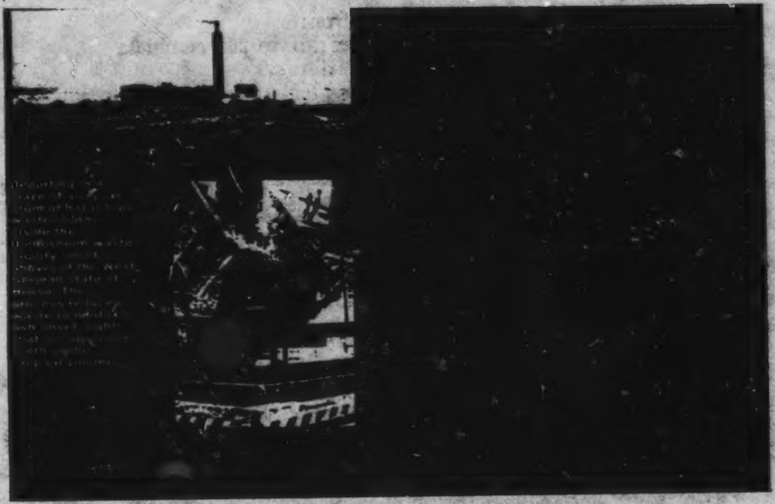
The high prices are also encouraging industries to look for ways to reduce their volume of chemical waste. In fact, the Hessian government has begun enforcing a policy that requires all new industrial facilities and any major modifications in old ones to include the best available technologies for reducing pollution and recycling wastes internally. Industry has challenged this policy, probably the first of its kind in the world, in court, but it may very well stand as a strong mandate for preventing pollution at the source.

Following the Leaders

Other European nations have awakened to the dangers of land disposal in the past decade. Sweden created a national waste-management firm, called SAKAB, in 1976, owned by the national government (96 percent), the Swedish Municipal Federation (2 percent), and the Waste Treatment Foundation (2 percent). SAKAB planned a central incineration and treatment plant and a network of collection and transfer stations to be completed this year. Municipalities will collect and transport the wastes, which must be treated by SAKAB unless a generator receives permission to treat waste on-site. Sweden has also been a leader in reducing the amount of priority wastes by restricting the use and sale of such products as mercury, PCBs, and cadmium.

Finland founded a waste-management firm in 1979, owned equally by the national government, the municipalities, and Finnish industries. The firm will detoxify approximately 70,000 tons of hazardous wastes each year at a centralized incinceration and treatment facility in southern Finland. The contract to design the system was awarded to the Danish firm Chemcontrol, of which Kommunekemi is a partner, and the plant is due to start up in 1986.

In the Netherlands, which banned land disposal of hazardous wastes in 1979, a lack of centralized treatment facilities has forced Dutch industries to treat wastes on-site, ship them out of the country, or dispose of them illegally (athough a few legal exemptions have been granted). The Dutch have recently proposed a central treatment facility to manage some 200,000 tons of hazardous wastes per year, now mostly shipped out of the country. The Dutch are most innovative, however, in their emphasis on waste reduction and recycling. For example, the chemical industry runs a successful waste exchange—a clearinghouse for information on wastes that can be used as raw materials in other manu-



facturing processes. And Dutch law allows the government to prohibit manufacturing processes whose wastes are very difficult or impossible to manage safely.

Lessons From Europe

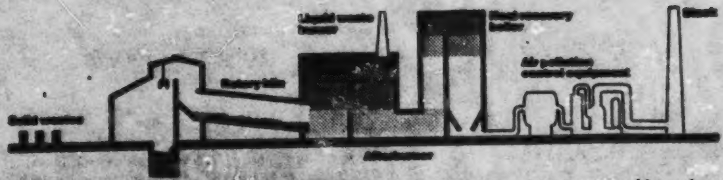
The point of these examples is not that management of hazardous waste in Europe is perfect. European nations are not without their Love Canals and similar problems. The strict Dutch laws stemmed from the discovery of over 1,000 old chemical dumpsites that may be dangerous to human health. In 1980, 268 families had to move from a housing development built above the Lekkerkerk dump—a former marsh filled with rock, gravel, and drums of chemical wastes—while cleanup crews began the long, expensive task of decontaminating the area.

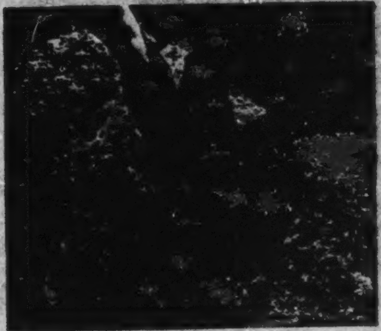
Some hazardous wastes still fall through the cracks, owing largely to inconsistencies in the regulation of hazardous wastes among European nations. Countries where standards are lax have become havens for wastes from countries with strict requirements, posing problems for governments investing in expensive treatment facilities. Great Britain and Belgium still allow hazardous wastes to be dumped in the ground, for example, while East Germany has created a huge dump near the West German border that accepts any waste from any country, at cut-rate prices designed to lure hard Western currency.

The obvious but often overlooked lesson from Europe is that detoxification facilities exist that virtually eliminate the need for land disposal of untreated chemical wastes. Safe management of hazardous waste in this country need not await the advent of new, "space-age" methods. We have the technology; what we lack is sustained political will.

European governments have shown that will by fully committing their resources and authority to recycling, treatment, and incineration facilities. The question that we should be asking in the United States, where the dump is still king, is "How do we move beyond dumping?" The European success has raised some critical issues for American managers and policymakers.

☐ *Is government ownership of hazardous-waste treatment facilities necessary and appropriate?* Of-





The rotary kiln incinerator (top) is the workhorse of most modern European plants that treat toxic organic wastes. The device typically operates at temperatures above 1,200°C with an efficiency of 99.9999 percent.

Inorganic wastes are treated by a mix of chemical and physical processes. Photo shows the dry, compacted residue produced at the Danish Kommunekemi plant. (Photo: California Governor's Office of Appropriate Technology)

ficials in European countries with government-owned facilities tend to distrust private-sector management, insisting that coordinating treatment of hazardous wastes is a necessary, though burdensome, public function. For them, control of hazardous waste, and pollution in general, carries risks too great to leave entirely to seekers of short-term profits. Dr. Ranier Mixlsperger, director of Bavaria's pace-setting hazardous-waste regulatory program, explains: "Because of the inherent dangers of hazardous wastes, we decided that private waste management would create too great a risk to the public and the environment. If the government both owns the hazardous-waste facility and regulates its operating excellence, we have stronger leverage to upgrade the control of these significant risks."

Government does intervene in managing some waste in the United States, such as municipal garbage, but those practices are certainly not the norm. Sustained and blatant government intervention is more common in Europe—and more easily tolerated by industry, large and small. This control may be especially tolerated in the area of hazardous-waste management because governments have also assumed some of the expense and liability. Furthermore, because government organizations manage toxic wastes in Europe, industry must decipher and comply with less of a maze of complex regulations. As a result, Denmark and West Germany have avoided America's two most paralyzing regulatory battles—deciding what qualifies as a regulated toxic waste, and how these wastes should be managed to ensure public safety and environmental quality.

☐ *Who will pay for hazardous-waste treatment facilities?* European nations have heavily subsidized the construction and operation of treatment facilities to keep costs to industry at a reasonable level. When only short-run costs are taken into account, the costs of treatment technologies are generally much higher than the price of conventional land disposal. Governments in this country can aid the shift to treatment facilities by financing their construction or providing low-interest loans or tax breaks to private waste-management firms. We must be careful, however, not to subsidize waste disposal so much that we discourage nascent efforts to reduce the generation of wastes at the source.

☐ *How can we site treatment facilities in the United States?* Most of the European facilities operating today were sited *before* risk became catastrophe—that is, before land disposal of hazardous wastes created the crisis that today is recognized the world over. As a result, public acceptance has been quicker, more efficient, and less costly to European businesses. This may be the ultimate lesson from Europe: preemptive activity, in the long run, gains greater respect from the community learning to accept the nature and necessities of high-risk management. Public trust in government has become the essential requirement in siting controversial facilities. The profound question facing Americans over the next two decades is whether policymakers can gain the public trust by enacting strict controls on disposal of hazardous wastes. Only then will the public agree to siting safe and reliable destruction facilities in their locales.

This latter question is especially pressing, because even the latest high-tech European treatment facilities have not been immune to public opposition. The Biebesheim incinerator, opened in 1981, encountered considerable opposition from local residents. They agreed that destruction of hazardous waste is necessary but did not want the facility in their com-

Denmark and West Germany . . . have avoided America's two most paralyzing regulatory battles—deciding what qualifies as toxic waste and how these wastes should be managed.

munity. Even the Kommunekemi plant came under fire from local residents after two accidental but (according to Danish officials) harmless releases of waste in 1982. Residents began to wonder whether treating all the country's wastes in their community was unfair. Attempts to build waste facilities in the United States now provoke similar hostility.

Yet the United States has taken tentative steps toward adopting a high-tech approach to managing hazardous wastes. In 1983, California began a regulatory program to restrict the land disposal of at least 40 percent of its hazardous wastes. The state is also providing siting assistance and financial incentives to encourage the construction of private recycling and treatment facilities. New York imposed similar restrictions on land disposal in the spring of 1984. And this spring the U.S. Senate began a series of debates on amending the critical hazardous-waste law, the Resource Conservation and Recovery Act. This bill, originally passed in 1976, was designed to encourage the recovery of resources from America's toxic waste, and to lessen the burden on landfills.

But since 1976, RECRA regulations have been riddled with loopholes that exempt more waste from control than is currently regulated. The fate of the American detoxification industry awaits the verdict on these pivotal amendments, which could begin to shift the entire thrust of U.S. management of hazardous waste beyond land disposal. For without comprehensive means of ensuring operating excellence, the technological methods for managing waste are no more useful than half a pair of scissors.

BRUCE PIASECKI, *professor of environmental history at Clarkson University's Center for Liberal Studies, is coordinating editor of* Beyond Dumping: New Strategies for Controlling Toxic Contamination *(Greenwood Press, 1984) and president of the American Hazard Control Group.* GARY A. DAVIS, *a chemical engineer and environmental attorney practicing in Knoxville, Tenn., is a principal author of* Alternatives to the Land Disposal of Hazardous Wastes *(California Office of Appropriate Technology, 1981) and a researcher for the International Institute of Applied Systems Analysis in Laxenburg, Austria.*

Mrs. **Schneider**. Mr. Grassley, if I might just add to the comments that Senator Proxmire has already made.

EPA has already done a macroeconomic study of the waste-end approach, and on an industrywide level, there is not much of an impact from the waste-end tax. But I would like to supply a portion of that EPA study for the record, if I may, so that you can see a point-by-point analysis of various industries.

[The information from Mrs. Schneider follows:]

IMPACT OF THE WASTE-END TAX ON INTERNATIONAL TRADE

The House Ways and Means Committee report expresses concern about the impact of the waste-end tax on international trade. The current feedstock tax rate is limited by law to a maximum of 3% of the annual cost of production for any particular industry. The Committee report implies that the rates imposed by H.R. 5640 would, for certain waste-intensive industries, exceed that 3% threshhold.

This concern does not appear to be warranted, according to information developed from an EPA memo evaluating the economic impact of a waste-end tax (specifically, the post-closure liability fund) on select industries.

H.R. 5640 imposes a tax rate of $5 per ton for injected wastes, which account for 60% of all land disposal. Of the remainder) approximately 10% would be taxed at $30 per ton, and 90% at $10 per ton, according to estimates developed by the House Subcommittee on Commerce, Transportation, and Tourism. The mean tax rate works out to about $8 per ton.

A study commissioned by EPA analyzing tax options for the post-closure liability fund found that a tax rate of about $5 per ton would fall well below 2% of the cost of production for all SIC industrial codes except agricultural chemicals. The attached table compares the tax as a percentage of cost of production for select industries, assuming average wet-weight tax rates of $5 and $10 per ton.

Even at the higher rate, the tax remains below 2% of the cost of production for all industries except agricultural chemical manufacturers. It should be noted that the agricultural chemical industry is exempt from the fertilizer feedstock tax under current law and H.R. 5640. In addition, the chemical industry general relies heavily on deep-well injection, which is taxed at the lower rate of $5 per ton.

WASTE-END TAX AS PERCENT OF ANNUAL COST OF PRODUCTION*

SIC/Industry	$5/ton**	$10/ton
Chemicals and Allied Products	0.370	0.740
Alkalies and Chlorine	0.168	0.336
Inorganic Pigments	0.346	0.692
Industrial Inorganic Chemicals, NEC	0.277	0.554
Cyclic Crudes and Intermediates	0.932	1.864
Industrial Organic Chemicals, NEC	0.505	1.01
Agricultural Chemicals***	2.0	4.0
Miscellaneous Chemical Products	0.001	0.002
Petroleum and Coal Products	0.888	1.776
Petroleum Refining	0.219	0.438
Stone, Clay, Glass Products	0.836	1.672
Primary Metal Industries	0.056	0.112
Blast Furnaces and Steel Mills	0.020	0.04
Primary Nonferrous Metals	0.118	0.236
Secondary Nonferrous Metals	0.186	0.372
Nonferrous Rolling and Drawing	0.001	0.002
Fabricated Metal Products	0.008	0.016
Machinery, Except Electrical	0.014	0.028
Electric, Electronic Equipment	0.001	0.002

*Derived from Memorandum to John Chamberlin, EPA Office of Policy Analysis February 29, 1984 (Exhibit 8)

**Gross-weight

***Fertilizer feedstocks are exempt from the feedstock tax in both H.R. 5640 and current law.

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Senator **Grassley**. Well, just a general followup question, then. As you thought about the tax that you are proposing, did this competitive factor enter into your thinking? Was it one of the factors you considered? And to what extent did you weight that in favor of your tax?

Senator **Proxmire**. Well, it certainly was one of the factors. And, of course, one of the reasons why we designed that tax this way is we feel the tax itself is a modest increase. As I say, it's $20 a ton, $5 for deep injection. And the amount it raises, people have criticized that. But I think it is a modest limited tax which would have a very limited effect on both the competition with other countries and also on the final cost to the consumer.

Be happy to give you further documentation. I certainly will.

The **Chairman**. Senator Mitchell.

Senator **Mitchell**. I have no questions, Mr. Chairman.

I thank both Senator Proxmire and Congresswoman Schneider for their testimony.

The **Chairman**. Senator Roth indicated no questions.

Senator Bentsen.

Senator **Bentsen**. Yes. A reference was made as to the possible complexity of the dry weight approach. In the Moynihan-Bentsen bill, we give them the alternative to go either way, wet weight or dry weight. It's the taxpayer's option to decide. If they want to choose the dry weight, then they have to make the necessary computations.

Let we also say a word about the complexity of the Bentsen-Wallop broad-based approach. In our bill we worked very hard for simplification. You take a number that is readily available to them, the gross sales of manufactured goods, and multiply that by the tax rate; they have to calculate that number any way. That's not a mystery. It requires no new calculations. It's used for the income tax purposes.

We've worked hard to address the very problems that you are talking about in that bill. On the other side of the bill is a credit. And to calculate that, all they have to do is take their purchases of direct materials. Now that number is not a mystery either. It's used in calculating inventory costs for income tax purposes. It will not require new calculations.

One other point that has been made on waste and taxes is that somehow the dry weight tax enhances the use of underground injection. But isn't it true that the RCRA amendments that we passed last year will be making a determination with respect to the appropriate use of various land disposal techniques, includes underground injection?

Let me also point out that we are trying to develop taxes that have some relationship to Superfund site problems. Now just how many Superfund sites are involved in underground injection wells? And I would like comments from either one of you on that.

Senator **Proxmire**. Let me just start off because I think Mrs. Schneider has the substantive answers on this. But let me point out, Senator Bentsen, if a firm chooses wet weight then it can be $45 a ton which is confiscatory, unfair to small business, and therefore wet weights, they are unlikely to use that under any circumstances. It's an option, but it's an option that they probably would not exercise. Therefore, they would be much more likely to choose dry weights.

Then I would defer to Mrs. Schneider for the definitive answer. She's the expert.

Mrs. **Schneider**. Well, it seems that based on the studies that the Environmental Protection Agency has done that it would be more expensive and more complex to administer; particularly, for small businesses. And when Mr. Grassley was asking us questions about our competitive competency in the international bases, certainly we have to look out for the small businessman, too.

But the EPA study found that the high cost of sampling for non-water content would make the tax prohibitive for small businesses. This is in calculations under dry weight.

The figures that they estimate are $35 to $70 a barrel. Now when you add that up, that could possibly put a number of small businesses out of business altogether unless you go to the wet weight measurements.

Senator **Bentsen**. Mrs. Schneider, I recognize some of the concerns and problems of small business and that's why we put a $100,000 sales exemption for small business in the Bentsen-Wallop bill. And, of course, I think Senator Wallop and I would certainly consider raising that exemption if it becomes a problem because we are trying very much to see that we have a simpler approach to it. And I think we've brought that about.

The other thing we've done in that bill is to take care of the situation of imports and exports by putting the tax on the imports; taking it off the exports. Doing that at the border is the simplest approach I think you can come up with.

Mrs. **Schneider**. If I might also add that I am concerned that we make sure that we piggy-back the RCRA regulations that we already have in place by providing an incentive through the waste-end approach to move us away from underground injection.

I serve on the Science and Technology Committee. We will be having more hearings on the technological competency of deep well injections. But I think that some of the examples like the Presque Isle example in Erie, PA, and some of the others throughout the country clearly indicates that if we are going to have a tax that provides an incentive, we want to provide that incentive away from deep well injections. And I think that our proposal more specifically does that.

Senator **Bentsen**. Well, I get back to the point that that isn't where you have seen your toxic waste site problems as far as in proportion to the others. And RCRA will be studying that.

We have tried to craft a proposal that more closely tracks what we think are the Superfund problems. And it is designed, obviously, to fall heavily on landfill and surface requirements.

The **Chairman**. Senator Chafee.

Senator **Chafee**. Thank you, Mr. Chairman.

There is one thing I would like to clear up. The suggestion was that in the waste generation tax that that would be at a whole series of different sites and thus the administrative problem would be difficult. Under the provision that Senator Mitchell and I have, that tax would be collected at the RCRA site so that the administrative problems would be far less.

Maybe you could comment on these quotes that are from the Joint Committee on Taxation study. It says here: "A disposal tax, unlike a feedstock tax has the effect of creating direct economic incentives for waste reduction and treatment." I think we will agree with that. "It is unclear, however, if adequate information exists about the degree of hazard of different waste and the environmental soundness of alternative disposal methods to design a rational disposal tax. If these low tax rates and exemptions are based on inadequate scientific data, such a tax could actually increase the amount of environmental damage imposed on society by the disposal of hazardous waste." In other words, by picking and choosing, because of the variation in the tax rates, there possibly could be this damage. For example, under the administration's proposal and also under yours, you have a lower tax for deep-well injection. Am I correct in that?

Senator **Proxmire**. That's right; $5 and $20.

Senator **Chafee**. "For example, under a proposal, deep well injection would in many cases be taxed at a lower rate than biological wastewater treatment. The inability to define adequately hazardous waste and determine their relative harmlessness is the primary reason why countries such as France and Germany, which tax the discharge of pollutants in the waterways, have not enacted taxes on hazardous waste disposal. A waste generation tax"—OK. I will stop there. And forget about Germany and France. What I'm really saying is do you consider this a legitimate concern that by the varied rates you are encouraging one form or another when we are not sure of the effect, the long-range safety, comparative safety, of those varied methods?

Senator **Proxmire**. Well, let me just answer quickly in part on that. And then Mrs. Schneider, I'm sure, has an answer, too.

We do exempt wastes which are neutralized, recycled and incinerated. And I think that it may well be—I think the Senator has made a good point—that if we can find any way to determine wastes which are not toxic in any way, obviously they shouldn't be subject to this kind of tax.

What we are concerned with is a tax which discourages a toxic waste, wastes which have a perverse environmental effect. And because we already provide for exemptions for waste that is treated, it seems to me that fitting into that exemption would also be wastes that are benign and have no perverse influence.

Senator **Chafee**. Well, let me read the next clause, which sort goes on this: "A waste generation tax"—now that's the generation tax—"would promote environmental policy by discouraging the generation of hazardous waste. However, unlike a disposal tax, it would not create an incentive or disincentive for any particular method of disposal." I guess that's a summary of the problem. Which way to go.

Do you have any comments on that?

Mrs. **Schneider**. It seems to me that a generation tax would be enormously difficult for industry, just enormously difficult, because so many manufacturing firms are generating waste. And what the waste-end tax does is to provide an incentive for all the companies generating waste to take the next step and recycle or reuse those wastes, and then whatever is not recycled will receive a waste-end tax on a disposal tax. And so what you are doing is rewarding the good guys who are recycling those wastes. And those who are not, they are going to have to pay a tax.

So I think it really comes down to making the distinction between putting a tax on all the generators of hazardous waste, which should have a very negative impact on industry, versus rewarding those folks who are using the technology available and recycling and reusing those wastes.

Could I just respond to one other point that you made, Senator Chafee?

We give deep well a lower rate because they have a lot of water in them and the small tax on deep-well injection is enough to discourage the practice, according to EPA. EPA says that the $5 will do it, will have the disincentive effect.

Senator **Chafee**. Well, thank you.

Mr. Chairman, obviously, we are going to have to deal with this later. And I certainly appreciate the light that Senator Proxmire and Congresswoman Schneider have shed on this difficult problem.

The **Chairman**. Senator Heinz.

Senator **Heinz**. Mr. Chairman, I think Senator Chafee was focusing in on probably the key issue here on these waste taxes—generation versus disposal.

And one of the issues that I think you can ask is if a method of disposal poses an environmental risk, why should it not be regulated as opposed to taxed. And, indeed, if, as I take the thrust of the Joint Economic Committee's report to be accurate, if you make the mistake whereby you don't have enough information and setting a tax on the disposal of a pollutant or water laden with pollutants at too low a rate, you may inadvertently create an incentive relative to other tax rates that makes that a more attractive method, even though you didn't mean to do that, of disposing of that particular hazardous waste.

Senator **Proxmire**. Well, you may do that, but as far as the waste-end tax itself is concerned, obviously, any tax will tend to discourage and improve the situation. Discourage the perverse practices and improve the waste disposal situation as it is without the tax.

Senator **Heinz**. Philosophically, no one could disagree with that. It is, however, in the nature of practicality that specific rates are going to be set on specific methodology.

And my question is: is it not better simply to regulate those methodologies than to attempt at some risk to set the tax rates where we think rightly or wrongly that they could do some public good?

Senator **Proxmire**. Well, I think it would be a far, far more effective regulator. And to side with my good friend, the chairman of the committee, that it should be used when it is when it does provide an incentive for behavior in the national interest. It's far more effective. It's more likely to be enforced. It's more likely to be respected.

In this country when we want to get something done, we impose a tax on it. That seems to have a far more——

Senator **Heinz**. How is that again? When we want to get something done, we impose a tax on it? [Laughter.]

Senator **Proxmire**. Forget that. [Laughter.]

Mrs. **Schneider**. I'll be happy to provide the Republican alternative point of view, if I may. And that is that I personally do not feel that this is a choice between regulation or taxation in order to achieve our mutual goal. I think that I personally overwhelmingly support the regulation. And I think that RCRA has retrofitted in such a way that it provides the kind of enforcement mechanism and the kinds of regulations that I think should make for a very effective system.

The waste-end approach is just an added level to assure us that we reach that same goal. But I will say that regulations alone are not enough. And I think that's why we are here today specifically focusing on waste-end. The Office of Technology Assessment and the National Academy of Sciences have also indicated that the regulations are not enough. And so, hopefully, this added level in enforcing environmental protection will assist us.

Senator **Proxmire**. And it has worked so much better in Europe with an effluent tax.

Senator **Heinz**. But, Bill, there's a——

Senator **Proxmire**. But nevertheless the fact is that they have followed that principle.

Senator **Heinz**. I've always had some real sympathy for effluent taxes. When I was a Member of the House—that was long before Claudine ever thought of running for political office, but you were here—I introduced the first bill in the House, brought to the House floor, for an effluent tax on water pollution. It was voted down overwhelmingly. People weren't ready for that idea.

Mrs. **Schneider**. Now they have finally caught up with you, Senator.

Senator **Heinz**. I think we've gotten to the point where we can at least intelligently focus on the idea. Thank you for your contributions.

The **Chairman**. Senator Mitchell.

Senator **Mitchell**. I would just like to make a comment concerning Mrs. Schneider's comment in response to Senator Chafee's question about the difference between a disposal tax and a generation tax. First, it should be noted that the overwhelming majority of generators are disposers. That is, except for a very small amount, the majority of disposal occurs on site by the entity that creates it.

Mrs. **Schneider**. That's true.

Senator **Mitchell**. And so there is really not any appreciable distinction in that regard.

Second, the legislation introduced by Senator Chafee and I has been referred to as the 'generation tax.' It's really a generation type tax because the tax is imposed on the owner or operator of the hazardous waste facility. It's then passed back, of course, to the generator.

And really the only difference is that it applies to waste generated whether it is disposed of or treated as opposed to yours, which would really tax only disposal and exempt treatment as a way of encouraging people to treat and not dispose.

But in terms of administration—it is imposed on the facility and since most generators dispose of it on site, it does not create any significant problems in that respect

Senator **Proxmire**. Senator Mitchell, the problem that I have with your tax is it really isn't the generator or the disposer. It's the fact that they get a tax treatment. What we want to do is to encourage treatment and not tax treatment.

Senator **Mitchell**. That's right. And I think Senator Chafee and I hold the view that the way to influence that is through the established mechanism of the Resource Conservation and Recovery Act. That's what the proper mechanism and form is for doing that. And we should not be attempting to make that kind of decision through tax legislation here.

Mrs. **Schneider**. Mr. Mitchell, if I might respond to your comments. I think that if we are worried about international competition that it would be an error for us to tax treatment because then I think our competitiveness would certainly be diminished.

Senator **Mitchell**. Thank you, Mr. Chairman.

The **Chairman**. Senator Bentsen, any other questions?

Senator **Bentsen**. No questions.

The **Chairman**. Senator Roth?

Senator **Roth**. No.

The **Chairman**. If not, thank you very much. We kept you a long time and I appreciate it.

Ms. **Schneider**. Thank you for the opportunity. Mr. Chairman, I had asked to have a few things included in the record.

The **Chairman**. I was reading your statement while you were asking and I didn't hear and I apologize, but they will be in the record.

Ms. **Schneider**. Good. Thank you very kindly.

The **Chairman**. Now we will take a panel of Dr. Suellen Pirages, representing Chemical Waste Management; and Richard Fortuna, the executive director of the Hazardous Waste Treatment Council.

Dr. Pirages, why don't you go first.

Dr. **Pirages**. First, I would like to make a correction. I represent the Institute of Chemical Waste Management, which is a component of the National Solid Waste Management.

The **Chairman**. I apologize.

STATEMENT OF DR. SUELLEN PIRAGES, DIRECTOR, INSTITUTE OF CHEMICAL WASTE MANAGEMENT, WASHINGTON, DC.

Dr. **Pirages**. On the assumption that my full statement will be put into the record, I would like to focus my remarks this morning on some of the issues that have been raised already.

The **Chairman**. Apart from congressional witnesses, we hold our witnesses to 5 minutes. Their statements are put totally in the record. And you can see why we have to hold ourselves to 5 minutes. By the time we question everybody, we use up an hour a witness with our questions.

Dr. **Pirages**. I understand that.

The **Chairman**. Go right ahead.

Dr. **Pirages.** What I would like to do is focus on the discussions you have had regarding the waste generation and waste disposal tax.

Our institute strongly believes that a waste disposal tax is an inappropriate mechanism for generating revenue for the Superfund program. It is unreliable. It is unstable. Moveover because of the 1984 Amendments, the revenue base is disappearing before we can even implement the tax.

We feel there are two adverse outcomes of a waste disposal tax. As we have stated on many occasions, we are concerned that instead of proper treatment, incineration, and disposal of the waste, what will happen is dilution of the waste and an increase in the generation of hazardous wastewaters.

Indeed, that is happening today.

I'd like to bring to your attention recent statistics provided by the Chemical Manufacturers Association. They surveyed their members to see what wastes were generated and how they were disposed. They found that in a 2-year period between 1981 and 1983, wastewater generation, industrial hazardous wastewater, increased 8 percent in volume. By contrast, the generation of solid wastes, those wastes that are not considered industrial wastewater decreased by 51 percent, which suggest that dilution is becoming the solution.

During that same period CMA's date show sharp reductions in waste management practices. Incineration decreased 31 percent. Other chemical and biological treatments decreased by 63 percent. Finally landfilling of hazardous waste decreased by 70 percent.

So we are very much concerned that if you impose a waste disposal tax rather than encouraging proper treatment, we are simply going to encourage the generation of industrial wastewaters which are discharged directly into surface waters or into the public treatment plants.

The second adverse impact of a waste disposal tax deals with the kinds of waste being generated. Because of the 1984 Amendments, we are going to find that in a very short time only inorganic waste will be put in any land disposal facilities. Organic waste can be burned, can be treated, and we hope that this will soon happen. But inorganic waste, those wastes generated by automobile industries, the iron and steel industries, mining practices, manufacturers of any kind of machinery and electronics, cannot be burned. Inorganics are natural components in our environment. The only option available to these industries is to have their waste treated, to immobilize the constituents, and then place the residue in a land disposal facility.

Therefore, a waste disposal tax will place a high economic burden on those industries that have no other option for treating their waste. These industries that I mentioned are also ones that are right now experiencing very difficult economic conditions and are being put in an adverse competitive advantage within the foreign marketplace.

Therefore, we urge that if this committee wants to address a waste tax, we would prefer a broad based, waste generation tax such as Senator Chafee and Senator Mitchell have suggested.

We have reviewed their proposal. We have a few minor concerns in it, but in general it is far preferable to tax all hazardous waste, thus encouraging minimization of those wastes rather than redirecting and shifting the way they are treated and handled.

We would suggest, that a preferable mode of funding for Superfund would be to expand the feedstock tax. EPA has admitted that not all of the hazardous constituents found at a Superfund site are now on the feedstock list. I would suggest that by expanding the components on the list, you may not have to increase the rate of taxation such that it would adversely affect the chemical industry.

Also we would strongly urge you to look at the more broad based taxing mechanisms that have been suggested as another means, a preferable means, of finding funds for Superfund.

Finally, the statement was made that many studies have looked at how a waste disposal tax would impact industries. I would like to emphasize that the only impact that has been evaluated for waste disposal taxes is the impact on the chemical industry. None of the studies to date have ever looked at the impact on those industries generating inorganic waste, and as I have stated, we contend that that will be a major economic burden. Thank you.

The CHAIRMAN. Thank you, Doctor.

[The prepared written statement of Dr. Pirages follows:]

ICWM
Institute of Chemical Waste Management
1730 Rhode Island Avenue, N.W., Tenth Floor, Washington, D.C. 20036 • 202 659-4613

STATEMENT OF

Dr. Suellen Pirages, Director
Institute of Chemical Waste Management

ON

REAUTHORIZATION OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980

BEFORE THE

SENATE FINANCE COMMITTEE

April 26, 1985

Mr. Chairman and members of the Committee, my name is Suellen Pirages, Director of the Institute of Chemical Wastes Management (ICWM). The Institute is a component of the National Solid Wastes Management Association and was formed in the late 1970s to promote proper management of hazardous waste. Members of ICWM are those commercial firms engaged in all aspects of hazardous waste management: transportation, storage, treatment, incineration and disposal. In addition, ICWM members conduct remedial actions under the Superfund program and receive Superfund wastes for treatment and disposal at our commercial facilities. It is the commercial waste service industry that has solutions to our national hazardous waste problems.

The Institute is pleased for the opportunity to testify before this Committee in support of the reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and to discuss financing and tax issues related to reauthorization. In this regard, my testimony focuses on two issues:

- the sources of funding for the Hazardous Substance Response Trust Fund (HSRTF), and
- the continuation of the Post Closure Liability Trust Fund (PCLTF).

HAZARDOUS SUBSTANCE RESPONSE TRUST FUND

Several proposals have been made regarding appropriate revenue sources for the HSRTF. There include feedstock taxes, waste taxes, general revenues, and taxes on corporate income. As this Committee evaluates these proposals, I urge you to consider four issues: the scope of the job to be done, reliability of any one funding source, ease of administration, and the impact of each proposed tax on U.S. industries.

Scope

Until recently the scope of Superfund action focused primarily on abandoned chemical waste management sites. The Senate Environment and Public Works Committee recently reported legislation to this Committee (S.51) that attempts to clarify the scope of the program but which may nevertheless include some sites contaminated by compounds other than industrial chemicals.

In developing appropriate funding mechanisms, the Institute believes that no one sector of our society should bear sole responsibility for our current problems. All of society has benefitted from chemicals and manufacturing products that generate hazardous waste. The funding sources should reflect this reality.

Thus, the Institute suggests that any expansion of the scope of the fund must be accompanied by an expansion of the tax base. For example, if sites contaminated through agricultural activities and low-level nuclear material are given CERCLA attention, agricultural and nuclear industries should be taxed.

Reliability of the Revenue Base

Because of the need to increase the size of the HSRTF, new funding sources are being evaluated. Proposals have been made to expand the feedstock tax, and implement corporate and waste-based taxes. The choice of any new funding source must prove to be as reliable and predictable as the current feedstock so that the public can be assured that we've made the financial commitment to get the job done and done right. Of these revenue sources, waste-based taxes are the least stable. This is particularly true of a waste-disposal tax because the revenue base already is declining and will continue to decrease as the requirements of the Hazardous and Solid Waste Amendments of 1984, P.L. 98-616, are implemented.

Through PL 98-616, Congress mandated that certain wastes must be restricted from land disposal. Thus increasing volumes of organic waste will be treated and incinerated in an effort to destroy hazardous constituents. Land disposal of these organic wastes will be minimal, if at all practiced. The only waste that will continue to be land disposed will be dilute aqueous wastes in deep wells and inorganic wastes placed in landfills and surface impoundments. The suggestion that any form of a waste-disposal tax can comprise a primary source for HSRFT funding is not based on the reality of strict implementation of the 1984 Amendments.

Futhermore, the physical characteristics of wastes currently being generated are changing. A recent survey by the Chemical Manufacturers Association (CMA) indicated that 99 percent of the total wastes generated by CMA members is industrial wastewater. The majority of this volume is treated on-site or discharged to public wastewater treatment facilities (POTWs). In addition, the amount of waste placed in the land has decreased 43 percent between 1983 and 1985. Thus the revenue base for a disposal tax is decreasing even before Congress reauthorizes CERCLA.

In addition, a disposal tax can motivate undesirable management practices. For example, generators of inorganic wastes can further dilute aqueous wastes streams and discharge these either to POTWs or directly to surface waters. The only constraint would be the need to meet National Pollutant Discharge Elimination System discharge limits and pre-treatment standards. The Government Accounting Office (GAO) recently released a report suggesting that not all RCRA wastes are being properly managed. With the addition of a tax on land disposal, more "leakage" from the system could be expected and the revenue base would be further eroded.

If this Committee determines that a waste-based tax is necessary to augment Superfund, I urge you to collect the tax on all hazardous wastes. A waste-generation tax will accomplish two purposes. First, by taxing at the point of generation, a larger revenue base will be available. Second, it will encourage waste minimization, a goal of the 1984 Amendments. For example, those companies generating large amounts of hazardous aqueous waste would be encouraged to reduce their volume if water, rather than dilute the wastes to acceptable POTW standards.

Ease of Administration

The Institute agrees that any funding course must be easily administered. The feedstock tax has not led to any administrative burdens for the Internal Revenue Service (IRS). Likewise, a corporate surcharge on U.S. businesses included in many other Superfund tax schemes would create few administrative problems. One reason for preferring a waste-disposal tax is the very few numbers of tax payers.

Opponents to a waste-generation tax state that it cannot be administered easily, due to the number of hazardous waste generators. Compared to a feedstock tax where 12 chemical firms contribute nearly 80 percent of the feedstock tax, any proposal to broaden the base of taxpayers could seem awesome. However, IRS does have the capability to administer individual and corporate income taxes. Both programs involve far greater numbers of taxpayers than would be included in a waste-generation tax.

I would urge this Committee to carefully consider the complicated administrative structures articulated in many of the current proposals for disposal taxes. These generally include complex mechanisms for granting refunds or credits for wastes receiving multiple treatment and disposal services. A waste-generation tax levied on all hazardous wastes at the point of generation would avoid duplicate taxation and make administration much less complicated. Several states (e.g., California, Florida, Kentucky, Missouri, Minnesota, Michigan, New Hampshire and New Jersey) currently employ a generator-based tax as a means of raising revenue for state Superfund programs. IRS should look to these programs as models for a federal counterpart.

There are tools available that would facilitate implementation of a waste-generation tax at the federal level. Both the Uniform Manifest and biennial generator reports can be used as audit and recordkeeping tools. The manifest is a requirement under the RCRA regulations and records the volume of wastes being sent from a generator to a RCRA facility.

Recognizing that 96 percent of all wastes are treated and disposed by the generator, and therefore are not manifested, other tools will be necessary to verify accuracy of tax receipts. EPA's currently required biennial report submitted by all generators details the volumes of waste and management practices employed. Many critics of the RCRA program have argued that a biennial report is insufficient. An annual report, they contend, is necessary if EPA is to properly enforce the federal regulations. Such an annual report would be an excellent tool for administering a waste-generation tax. Finally, PL 98-616 includes a requirement that generators must certify their attempts to minimize waste generation. Such certification would document the volumes of waste generated annually and could serve as an additional tool for the IRS in administration of a waste-generation tax.

Impact on U.S. Industries

Many representatives of the chemical industry have testified before both House and Senate Committees that an increase in tax rates applied to the feedstock list would have major adverse impacts. However, according to EPA, many chemicals frequently found at Superfund sites are not presently on the feedstock list. I would suggest that if the feedstock list were expanded to include the broad range of chemicals (particularly organic compounds) of major concern at Superfund sites, this additional revenue may reduce the need for higher tax rates on the current feedstock list. Likewise, the proposals for a corporate surcharge include tax rates that are very low. There is no expectation that these surcharges would adversely impact any one industrial segment of the economy. In contrast, a waste disposal tax will have an equal, if not greater, adverse impact on a diverse range of U.S. industries than the impact of an increased feedstock tax on the chemical industry. Let me elaborate.

There are two categories of waste: organic and inorganic. Organic wastes can be destroyed -- inorganic wastes cannot. Inorganic compounds are natural elements found in all living and non-living components of our planet. Inorganic wastes can only be treated to immobilize the hazardous constituents before the treated product is placed in the land. Thus, an undue economic hardship is placed in those U.S. businesses generating inorganic waste. Such businesses include metal manufacturing industries, ceramic industries, primary metals industries, automotive and machinery manufacturing industries, to name only a few.

These industries are experiencing severe economic conditions today. A tax on inorganic wastes at rates presently being proposed may lead to the collapse of many vital businesses in this country. For example, current prices for treatment and disposal of electroplating wastes are in the range of $80 to $90/ton. A disposal tax of $50/ton represents a dramatic increase for the electroplater and likely will result in the closure of many electroplating businesses.

Moreover, a heavy tax on wastes with no other management option could lead to undesirable outcomes. Some waste treatment processes that decrease the level of hazard by preventing constituent migration actually increase the volume of inorganic wastes. Thus, a higher tax would be paid on less hazardous waste, resulting in disincentives for treatment. Proper treatment of inorganic wastes must be encouraged.

Solidification of these wastes with subsequent placement in the land is preferable, as I mentioned earlier, to dilution and discharge to POTWs or to surface water sources.

I urge this Committee to carefully evaluate the economic impact as well as incentives for improper management of all proposed funding mechanisms. I must emphasize that no study on taxation mechanisms for the HSRTF have looked at these two potential outcomes. In studies conducted to-date (EPA, Congressional Office of Technology Assessment and Environmental Defense Fund), only two types of evaluations have been made: the economic impact of an increased feedstock tax on the chemical industry and the ability of federal or state agencies to administer disposal taxes. I reiterate, the economic and management impact of such a disposal tax on those industries generating inorganic wastes will be major.

In sum, all would agree that sufficient funds should be provided to the Superfund program. The members of the Institute are dedicating their capital to build capacity to handle these wastes. The commercial industry wants to participate in the effort to alleviate the nations' hazardous waste problem, but not as its tax collectors. I would urge Congress to review carefully the range of taxation options being floated before relying heavily on any one source. The Institute is convinced that the broader the revenue base the lower the tax rate could be and the less likelihood that such a tax would adversely impact any one sector of the economy.

POST-CLOSURE LIABILITY TRUST FUND

The PCLTF was established as a prepaid perpetual care fund for a limited class of top-quality, government-approved disposal facilities after they have been properly closed and monitored. The initial purpose of the PCLTF was to provide a means to plan for future liabilities by paying into the fund during operation of the facility. In addition, the existence of the fund assures host communities that a source of funds would be readily available to address any unforeseen future problems.

There has been considerable debate about continuation of this fund. Some opponents have the perception that liability totally shifts from the owner/operator of a facility to the PCLTF. Arguments have been made that existence of the fund encourages planned obsolescence of disposal facilities, and that such sites will only be designed and operated properly for as long as the operator retains liability. In addition, many opponents have argued that the existence of the fund discourages full costing of land disposal practices. None of these arguments are valid.

When one examines the full complex of laws governing the operation of hazardous waste management facilities, it is clear that the owners/operators do not transfer liability and responsibility for the RCRA site. We are required to be responsible for corrective actions during operation and for 5 years post-closure, and maintenance of the site for 30 years after operation ceases. The PCLTF only provides funds for unanticipated and future damages (after 5 years post-closure) and for maintenance of the site (beyond 30 years post-closure). While accepting responsibility for our sites, the commercial waste service industry wants the opportunity to set aside monies now while we have business income. The continuation of the PCLTF is the only method we have to plan for future financial needs.

The PCLTF does not encourage planned obsolescence. If the fund were abolished today, the level of performance as required by law would not change. Facility owners/operators still must comply with RCRA regulations as well as the recent stringent mandates provided in PL 98-616 as a condition for receiving final operating permits.

There is a real need for the PCLTF. The fund does provide the public a mechanism to address future problems at a site without reliance on government funds. The revenue in the PCLTF is taxes paid by the commercial waste service industry. Without the PCLTF, if a responsible party cannot be identified, future corrective action after closure of a facility would be possible only by drawing from general revenues or CERCLA funds. I do not believe that Congress intended CERCLA be in existence 50 to 100 years from now. It seems to be much more reassuring for the public and particularly for those communities located near land disposal facilities to have a ready source of monies available to address any environmental problems at the sites immediately, and to have this availability without question, without necessary administrative enforcement actions, and without litigation.

The Administration's bill proposes to repeal the PCLTF. The Institute acknowledges that improvements in the current structure of the PCLTF can be made. I urge you to consider improving the concept rather than repealing it. The ICWM has shared several proposals for improvement with staff of this Committee and other interested parties. They include the following items.

Clarification of Tax Basis. The present law assesses a tax of $2.13/ton on hazardous waste placed in land disposal on a "dry weight" basis. Two problems can be identified. First, waste volumes are not measured as dry weight. Second, the IRS has reported that fewer than the anticipated number of taxpayers are currently paying the PCLTF tax. I would suggest that use of dry weight as the measurement basis, and lack of guidance on who must pay, contribute to underpayment.

The Institute recommends the substitution of "wet weight ton" as the unit measure with an additional option, at the discretion of the facility owner or operator, to allow payment of the tax on measurement of total solids in the waste stream. If the wastes are highly dilute aqueous material, this latter method is preferred. In addition, it should be clearly stated that the tax be collected on wastes deposited at all land disposal facilities both on and off-site, including deep wells, waste piles, land farming, surface impoundments and landfills.

Broaden Application of the Tax. The present language of the law defines the universe of wastes to be those which EPA had defined as "hazardous waste" on December 11, 1980. EPA has added and is presently investigating the need for additions to its list of hazardous waste. Also in PL 98-616, Congress directs EPA to accelerate this process. Furthermore, EPA has allowed delisting of certain wastes due to treatment applications that render them non-hazardous. The law should be changed to include newly listed wastes and to remove those wastes that have been delisted.

Establish a Permanent Tax. When the PCLTF was enacted as part of the CERCLA statute in 1980, the collection of the tax was inadvertently "sun-setted" along with the HSRTF tax in 1985. All parties to the authorization of the fund recognized that the tax was designed as a permanent tax within the RCRA program. S.51 only extends the fund for another 5 year period. Provision should be made for perpetual existence of the fund.

Limit Eligibility. Eligibility for the fund is limited to those RCRA-permitted disposal facilities that are properly closed. Since enactment of the PCLTF in 1980, EPA has issued stringent disposal permit regulations. In addition, PL 98-616 imposed further design requirements that reduce the likelihood of migration of constituents from a disposal facility, particularly landfill and surface impoundments. EPA will require RCRA permits for closure of a facility as well as its operation. In addition to proper closure requirements, the Institute recommends a limit on eligibility to those facilities that have paid into the fund for at least ten years. This requirement would exclude effectively those facilities that had evaded payment of the tax or for which evidence of failure was found because of long-term operation.

Retention of Liability. Owners and operators of disposal facilities look to the fund as the mechanism for planning long-term liability needs. There is no commercial insurance available for such coverage. This was attested to by a Treasury Department study. During recent hearings before the Senate Committee on Environment and Public Works, the insurance industry reaffirmed the limited availability of environmental impairment insurance for operating facilities. None is available after closure.

To address the concern that owners and operators should retain some liability as an incentive to go the extra mile in complying with RCRA regulations, the Institute proposes to change the character of the fund to one based on the principles of insurance. It would require owners and operators of a facility to pay a deductible, and set a maximum benefit on costs borne by the fund.

Remove the Ceiling. All the money used in the PCLTF is derived from dedicated industry taxes. There is no provision in the law for general revenues to compensate for any potential short-fall. When Congress enacted the PCLTF in 1980, EPA was directed to study the sufficiency of the tax rate and size of the fund. Data from the EPA study suggest that the tax rate is adequate if the fund is not "capped" at the present $200 million dollar ceiling. The Institute supports a removal of the cap provision.

Driven by the requirements of PL 98-616, the reality of the situation is that there will be fewer land disposal facilities in operation. Estimates of current closures run between 25 and 50 percent of existing facilities. At the same time, the potential for migration of hazardous constituents beyond those facilities that met the strict requirements of PL 98-616 -- minimum technology, increased monitoring, and restrictions of certain wastes from land disposal -- will not approach the conditions seen at Superfund sites. Early detection will eliminate large-scale remedial actions reducing the cost of future response. Thus, sufficient funds to cover these sites can be assured. And in the unlikely event that a facility exceeds the limits of PCLTF coverage and it is determined that the owner/operator is insolvent or has disappeared, the fund rather than the government could pick up the tab for cleanup.

Let me make one final point. It is essential that the administration of the PCLTF remain under the purview of the Federal Government. It is the only entity whose existence 50 or more years in the future can be assured. If one reviews the range of companies in operation in the early 1900's, very few of them are still in operation today. Moreover, the Federal Government is the only entity that can compel all owners/operators to contribute to the fund. Without mandatory contribution, a competitive pricing advantage is given to less responsible companies that have no intention of remaining in the market long enough to risk their assets should problems develop after closure of their sites.

I urge Congress and this Committee to recognize the good business sense which forms the basis for this fund. The framework has been initiated; funds are being collected. I cannot urge too strongly that it is far more prudent action on the part of Congress to legislate improvements to the fund rather than to eliminate the only mechanism available to address potential future problems.

Mr. Chairman, as this Committee continues its deliberations on legislation to reauthorized CERCLA, I hope that you give serious consideration to the issues I have raised. The Institute continues to stand ready and willing to provide you and your staff constructive and helpful input on developing specific provisions. I thank the Committee for this opportunity to appear and express our views on this matter and welcome any questions you might have.

STATEMENT OF RICHARD C. FORTUNA, EXECUTIVE DIRECTOR, HAZARDOUS WASTE TREATMENT COUNCIL, WASHINGTON, DC

The **CHAIRMAN**. Mr. Fortuna.

Mr. **FORTUNA**. Thank you, Mr. Chairman. I appreciate the opportunity to be here this morning.

The Hazardous Waste Treatment Council is a national association of commercial hazardous waste treatment and management firms that are committed to the primary use of treatment and the restricted use of land disposal in the management of hazardous waste.

We were instrumental in last year's reauthorization of the Research Conservation Recovery Act, the amendments which essentially restructured our national hazardous waste policy by imposing explicit restrictions on land disposal and closed many of the regulatory loopholes in our current hazardous waste law.

I think an appreciation of the changes in this law are central to an understanding and discussion of any waste base fee system. This will be the subject of my discussion this morning.

The Treatment Council and its members and firms like it are the firms you hear so much about. The firms that are the purported beneficiaries of a waste-end fee system.

If we have one message this morning for the committee, it is that we do not need these kinds of incentives.

The 1984 RCRA amendments, I believe—and we collectively believe—provide all the necessary incentives of the next 3 to 4 years to provide for the proper and permanent and protective management of hazardous waste and the true prevention creation of future Superfund sites.

Now we have outlined in our testimony several shortcomings of waste base fee systems. And, indeed, have outlined a proposal as to how we think one could work if the committee is disposed to do so.

What I would like to do is just cite two examples of recent bills that really work against the incentives and priorities established under RCRA and only totally pervert the incentives for proper treatment.

The first of those is the House Commerce Committee bill from last year, the CERCLA reauthorization bill. Directly on the heels of approving a RCRA reauthorization bill that prohibited the uncontrolled burning of hazardous waste and phased out leaking and unmined surface impoundments as a means for management of hazardous waste, a bill was approved that explicitly exempted these methods from the tax.

Turning to the administration's bill, there are several flaws inherent in the administration's waste-end tax. The first is probably the most fatal in the sense that they rely too heavily on waste-end fees. Any funding system that relies on waste-end fees for a significant component is really doomed to failure by virtue of the fact that you are essentially taxing a shrinking base of taxable activity.

In addition, the administration bill equates deep well injection with incineration and also fails to tax many of the unregulated activities such as uncontrolled burning and the like.

I think it's also worth noting that the post-closure liability trust fund, which is a waste-end fee currently in the Superfund law, has collected only 25 percent of its projected revenue.

Now as I note, there are ways to make a waste-end fee system workable. And we have outlined one in our testimony. I think that if you do go waste-end or waste based fee system, the way to go would be a combination of the Chafee-Mitchell bill with elements of the Bentsen-Moynihan bill. It would be, I think, critical however to ensure that the placement of the responsibility for the tax is at the generator; not at the RCRA treatment, storage and disposal facility.

This is because of the inescapable fact that still today there are too many wastes that are hazardous when generated but are not hazardous when disposed of. One of the major or manifestations of this are the statistics that Suellen cited relative to sewer disposal. Burning and blending is still exempt. Ocean disposal is not covered. And many so-called recycling practices are still not covered under the RCRA amendments.

Another example of this would be an emission control dust that would contain 2 to 3 percent lead can still be shipped and put into fertilizer and manufactured as a product that would not be subject to a tax unless taxed at the site of generation.

The simple fact is that the RCRA amendments, as good as they are, and as sound as they are, and as much as we support them, are still a road map. They are not the end of the journey.

If we were sitting here 3 or 4 years from now when all the restrictions would be in place and the various loopholes closed, then our position might be different. But we still have a long way to go to implement the RCRA amendments.

Regarding the mix of other components for the Superfund funding, we do believe that Superfund should be maintained as an omnibus response law for a wide range of toxic substances releases. And, as such, there is a justified basis for expanding the taxation base.

We do believe that the general revenue components should probably be increased from a range of 12 percent upward to 15 to 18. The feedstock fee should probably be doubled, along with the petroleum fees. And add to that various inorganic feedstocks that are showing up as pollutants and contaminants at Superfund sites, but which are not being taxed.

And I think probably the easiest way to compliment or broaden the base of Superfund taxation would be to go with something on the order of a gross receipts tax or a value added tax. Superfund is responding to a number of their nontraditional, nonabandoned site situations. Pesticide runoff in Hawaii.

Thirty seconds, Mr. Chairman.

Pesticide runoff in Hawaii. Paint chips in Pennsylvania and Philadelphia. Mining site waste and the like. And I think the responsibility for funding it should be borne by a broader base of American industry. I think the best way to probably do that would be through a gross receipts tax.

Thank you.

[The prepared written statement of Mr. Fortuna follows:]

HAZARDOUS WASTE TREATMENT COUNCIL

(202) 296-0770
TELEX: 89414

1919 PENNSYLVANIA AVENUE, N.W.
SUITE 300
WASHINGTON, D.C. 20006

TESTIMONY

RICHARD C. FORTUNA
EXECUTIVE DIRECTOR
HAZARDOUS WASTE TREATMENT COUNCIL

BEFORE

SENATE FINANCE COMMITTEE

REGARDING

CERCLA FUNDING PROVISIONS

APRIL 26, 1985

Mr. Chairman, Members of the Committee I appreciate the opportunity to testify this morning on the funding provisions of the Superfund, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

BACKGROUND ON THE TREATMENT COUNCIL

The Hazardous Waste Treatment Council (HWTC) is a national association of commercial firms that share a common commitment to the primary use of treatment and recycling technology in the management of hazardous wastes, and to the restricted use of land disposal. The Council is the largest organization representing the interests of commercial hazardous waste treatment and management firms. Our 40 member companies operate facilities in 48 states and represent the full spectrum of established and emerging treatment technologies and management methods, including remedial site investigation and cleanup.

The Treatment Council was the lead industry group in the 1984 reauthorization of the Resource Conservation and Recovery Act (RCRA), the nation's basic hazardous waste management authority. The 1984 RCRA reauthorization (see attachment for summary of key provisions) restructures the nation's waste management policies by establishing a program to truly prevent the creation of additional Superfund sites through restrictions on land disposal and the closing of many regulatory loopholes. I would also note that I personally had the privilege to work on the original Superfund bill while serving onthe staff of the House Energy and Commerce Committee.

OVERVIEW OF TESTIMONY

My testimony this morning will focus on the impacts and components of a waste-based fee system. The Members of the Hazardous Waste Treatment Council and related firms are the purported beneficiaries of these various approaches that seek to raise additional revenue, discourage land disposal, and encourage the use of alternative treatment methods.

After much internal examination, independent study (provided to the Committee), and review of various state programs and last year's CERCLA reauthorization we have concluded that waste-based fee systems in general do more to pervert the incentives for permanent treatment than they do to encourage their use. This is due to their inconsistency with the policies of the 1984 RCRA amendments (see attachment), and their sole focus on land disposal as the tax base.

The 1984 RCRA amendments already establish not only incentives for proper management but in fact directly proscribes a wide range of land disposal activities. In addition, they seek to eliminate many of the other regulatory loopholes that are unrelated to land disposal such as the burning of hazardous waste in boilers, sewer disposal, and bogus "recycling" practices.

These proposals by limiting the tax base to land disposal activities, by failing to exempt effective and desired treatment methods, and by failing to include in the tax base many of the other undesirable practices that will or may be outlawed by the RCRA amendments have created the worst of all possible situations: taxing the very treatment practices that are identified in the 1984 RCRA amendments as the prefereable means of hazardous waste managment, while exempting from taxation and indirectly subsidizing the very loopholes or undesirable practices that the bill seeks to eliminate.

In addition, the large waste-based components of several of these schemes place primary reliance for revenue generation on a shrinking base of taxable activity due to the land disposal prohibitions already contained in the RCRA amendments. In short, the larger the reliance on waste-end revenues and the more it is limited to land disposal alone, the more the system works against itself from both a revenue and environmental standpoint.

As the purported beneficiaries of waste-based taxation schemes it is our decided preference that no waste-end funding provisions be included in CERCLA. We believe that all the necessary and reliable incentives and requirements for proper and permanent management of hazardous wastes are contained in the 1984 RCRA amendments.

If we are to have a waste-based fee system it should have realistic expectations and policies that do not send perverted signals to the regulated community. The guiding principles of any successful waste-based system and a specific plan to implement them are discussed in the subsequent sections of this testimony, repectively.

GUIDELINES FOR WASTE-BASED FEE SYSTEMS

For any waste-based fee system to be successful the Treatment Council believes it must satisfy the following guidelines:

* Modest Supplement: Waste-based fee systems can only be expected to modestly supplement the fees collected from general revenues, and petroleum and feedstock taxes. State-level experience has demonstrated that the greater the reliance on waste-based fees the less reliable

the total revenues for the program. This is particulary true where sole reliance for revenues rests with the shrinking base of land disposal. A yearly waste-based revenue of approximately $500 million is a realistic level of revenue collection that does not engender false hopes or specious claims of revenue potential and also reflects the likelihood of underreported waste volumes particularly for on-site management of hazardous wastes where there is no manifest system to verify waste volumes, shipments or transactions. It should be noted that 95% of all wastes generated in the U.S are managed on the same site;

* Primary Purpose is Revenue Collection: While much is made of the incentives for proper treatment that a waste-based fee system provides, it must be recognized that such systems are first and foremost revenue raising measures. All the incentives for proper treatment and management are already provided in the 1984 RCRA amendments. A system that can raise supplemental revenue, while doing no harm to the RCRA policies by commission or omission is the best that can be expected;

* Consistency with 1984 RCRA Amendments: Our greatest concern with waste-based systems in general is that while well-intentioned, they will undermine the land disposal prohibitions the closing of regulatory loopholes established under the 1984 RCRA amendments (see attachment). In fact, these concerns are borne out by an examination of the House Commerce Committee bill of last year and this year's Administration bill. While uncontrolled burning of hazardous waste in boilers and the management of hazardous wastes in leaking surface lagoons are both scheduled for prohibition under the 1984 RCRA amendments, they were also totally exempted from taxation under the 1984 House Commerce CERCLA bill. Similarly, the current Administration bill fails to tax these and other "loopholes" and provides no exemption for treated wastes;

* The Proper Treatement of Hazardous Waste is Its Own Tax: The proper treatment, destruction, and recycling of hazardous wastes in many cases costs more than land disposal. Doing something and doing it right invariably costs more than placing material in the ground and doing nothing. Taxing treatment methods only further penalizes those that are already paying more for properly manage their wastes;

* Tax Base Must Include All Undesirable Practices Identified by the 1984 RCRA Amendments: To avoid providing indirect subsidies to those practices that have been identified for phaseout under the 1984 RCRA Amendments, they too must be subject to taxation until such time as regulations are issued and the prohibitions take effect. The failure to tax these loopholes (burning for energy and materials recovery, bogus "recycling", sewer disposal, ocean dumping), while taxing permitted treatment methods totally perverts our

national hazardous waste policy in fact encourages generators to use these undesirable practices for as long as they can and to the greatest extent they can. Unless the tax scheme is properly structured, ironically it will cause a shift of wastes to these very methods that have been designated for phaseout and which themselves have been the cause of many "Superfund" sites. If there is one axiom in the hazardous waste management field it is that absent any regulatory requirement, wastes will flow to the management practice of least cost and least control. The burgeoning list of "Superfund" sites provides somber confirmation of this fact. In addition, the existence of these loopholes account for the fact that the volumes of hazardous waste generated is far greater than the volumes of wastes that are ultimately delivered to and managed at RCRA treatment storage and disposal facilities (TSDFs). A RCRA waste can quickly escape RCRA tracking and control via one of these loopholes;

* Broadened Base of Fee Payments and Collection: Just as 50 years of improper management are not going to be remedied in 5 years of CERCLA cleanup, so to the scope of tax payers and collection points cannot be limited RCRA treatment storage and disposal facilities (TSDFs). The base of collection points must be broadened to include generators of RCRA wastes in order to catch those wastes that are not managed at RCRA TSDFs. An increase in the number of taxpayers has never been a sole basis for rejecting a revision to the tax code. Similarly, the fact that the number of collection points will increase to approximately 15,000 (presuming generators below 1,000 kg/mo are excluded) should not provide an administrative excuse for properly strucuturing the collecting mechanism;

* No Need For Punitive Levels of Taxation: A taxation level of $2-5/ton provides more than enough flexibility to raise the target level of revenue, and is more likely to be collected than a taxation level of $25-50/ton. The 1984 RCRA amendments already impose substantial capital costs on future land disposal that have narrowed the disparity between treatment and disposal costs, generally. In addition, many state CERCLA revenue programs already depend upon signficant land disposal taxes that may be jeopardized by additional Federal taxes particularly when the level of taxation is punitive;

* Wet Weight Ton: The unit of measure for assessing taxes must be the wet weight ton. The use of dry weight ton is a specious basis for taxation and creates an artificial distinction with no environmetnal significance or basis. When a Superfund site is cleaned up all materials; liquids, sludges and soils must be cleaned up, not only the dry weight portion. Moreover, the basis of taxation must be consistent with the medium and manner in which contamination has occurred. If all wastes were dry when disposed, and without a liquid medium for contamination to migrate there

would be few Superfund sites. In addition, there is no accepted method for determiing dry weight ton and the cost of determining dry weight ton for a given waste will invariably exceed the tax itself;

* Deep Wells Must be Taxed at the Levels of Other Land Disposal Methods: Under the 1984 RCRA amendments deep well injection is subject to the same substantive prohibitions and restrictions as other forms of land disposal. While we currently believe that the frequency of deep well failure is lower than that of other land disposal methods, the uncertainty associated with deep well injection and the enormous zones of contamination that have been caused by well failures dictate that no special consideration be accorded to deep well injection (see attached editorial from Chemical Week). Over 58% of all the wastes disposed of in the U.S is deep well injected. The deep well site at Erie, Pennsylvania, which is on the Superfund priority list, presents a virtually insoluble problem with a zone of contamination the encompasses two states, and parts of Ontario and Lake Erie. Moreover, much is made of the fact that deep welled wastes are dilute and therefore of lesser concern. However, when an aquifer is closed due to contamination, the levels rarely exceed the part per million range. Even though only 1% of an aquifer may be contaminated, and despite the fact that the dry weight of such contaminants are even less than that, the water is still unfit for human consumption. Given the environmental persistence and mobility of much of the deep welled wastes, the "dilute" character of these materials is largely irrelevant.

TREATMENT COUNCIL VOLUME OF GENERATION PROPOSAL

The membership of the Hazardous Waste Treatment Council believes that a system which taxes the volumes of wastes generated irrespective of where it is generated provides the broadest and most reliable basis for revenue collection. The provisions of a generation volume tax would include:

* a tax of $2-5 per wet weigh ton;

* taxing hazardous wastes on the volumes generated and limiting the exemptions to those wastes that are managed at a treatment facility permitted under RCRA, the Ocean Disposal Act, or the pretreatment provisions of the Clean Water Act;

* as such a tax would be imposed on all wastes generated and that are land disposed as a hazardous waste, all management of wastes in leaking and unlined surface lagoons unless they meet the criteria for exemptions specified in the 1984 RCRA amendments, all unpermitted burning of hazardous wastes, certain reclamation practices

such as dust suppression, sewer disposal of material that has not been pretreated, and the direct ocean disposal of RCRA hazardous wastes;

* a delayed effective date of 2 years from the date of enactment would be included to allow sufficient time for the Agency to finalize regulations governing the phaseout of various recycling practices such as unpermitted burning of hazardous wastes;

* an IRS reporting requirement for on-site managers of hazardous wastes to complement the RCRA manifest requirement for off-site management of hazardous wastes and to assist the IRS in verifying the volumes and types of waste generated for the purpose of assessing the tax.

The Treatment Council appreciates the opportunity to present its views and recommendations this morning and looks forward to working with the Committee during its development of a CERCLA funding provision.

HAZARDOUS WASTE TREATMENT COUNCIL

(202) 296-0778
TELEX: 89414

1919 PENNSYLVANIA AVENUE, N.W.
SUITE 308
WASHINGTON, D.C. 20006

HAZARDOUS WASTE AMENDMENTS OF 1984 (PL 98-616)

* Establishes an explicit national policy in favor of alternatives and identifies land disposal as the method of last resort;

* Specifically lists those wastes that are to be scheduled for prohibitions such as solvents, dioxins, metal-bearing wastes, corrosives and halogenated organics;

* Establishes a direct presumption against land disposal of all hazardous waste;

* Supports the presumption with self-implementing sanctions in the event the Agency fails to act by specified dates;

* Requires that all new land disposal facilities contain dual liners to prevent migration;

* Requires the retrofit of all leaking and unlined surface impoundments;

* Closes the loopholes for uncontrolled burning and blending, small generators, recycling practices generally dust suppressants, and sewer disposal;

* Restricts the use of absorbents and the land disposal of containerized and bulk liquid hazardous waste;

* Provides cleanup authority for continuing releases through the permitting process, and for direct corrective action through interim status administrative orders;

* Directs the Agency to generically list and bring additional wastes under RCRA control, and strengthen the delisting process;

* Provides for broader enforcement authorities, increased criminal penalties and direct citizen enforcement of the law;

* Establishes a nationwide program for the regulation of new and existing underground storage tanks and the phase out of bare steel tanks.

HWTC-EDF RCRA REWRITE SEMINAR

RCRA IMPLEMENTATION SCHEDULE

DATE OF ENACTMENT (November 8, 1984)

* Ban on placement of bulk and containerized hazardous wastes in salt domes, underground mines and caves until regulations and permits issued

* Ban on used oil mixtures and hazardous wastes for dust suppression

* Permits for new land disposal facilities and surface impoundments and lateral expansions of existing units must require double liners and ground water monitor. Four 9's required for new incinerators. Limited waivers from dual liner requirements available to those that can demonstrate equivalency of natural settings (except in Alabama) and for monofills of certain foundry wastes.

* Preconstruction ban

* Permits issued after date of enactment shall require corrective action for all hazardous constituent releases from any solid waste management unit at a TSDF

* Corrective action must be taken as necessary to protect human health and environment for releases beyond the facility boundary (via regulation ASAP post-enactment) for all facilities receiving wastes after July 26, 1982

* Cement kilns in urban areas of 500,000 population or greater must have a 3305(c) permit and be in compliance with full incinerator standards in order to continue operating

* 10 year permit life for all TSDFs, 5 year review for land disposal facilities

* All facilities that received wastes after July 26, 1982 and which closed prior to January 26, 1983 remain subject to groundwater monitoring and corrective action requirements

* Annual inspections of state-owned facilities goes into effect

* Annual report on hazardous waste export

3 MONTHS

* Warning label on waste-derived fuels

4 MONTHS

* Final standards for all underground tanks holding hazardous wastes

5 MONTHS

* Report to Congress on nature and scope of SQG problem

6 MONTHS

* Prohibition on bulk liquids in landfills, whether or not absorbents have been added

* Wastes taken to interim status land disposal facilities that have applied for expansion post-enactment must be placed in cells that meet the minimum technology requirements

* Decisions on listing of chloro-dioxins and furans

* Prohibition on Class IV injection

* Report to Congress on nature and scope of Class I deep well injection practices and problems

* Submit a report to Congress on the feasibility of using private inspectors for hazardous waste facilities

* Governors shall designate appropriate state agencies to receive notification on tanks

* Bare steel tank ban goes into effect

* Federal procurement guidelines for recycled paper

9 MONTHS

* SQG manifest requirement

* Exposure assessments to accompany landfill and SI permit applications

10 MONTHS

* Generator manifests must contain waste minimization certification, and any permit issued must require an annual certification

11 MONTHS

* Report to Congress on feasibility of performance standards for waste reduction

12 MONTHS

* Prohibition on non-hazardous liquids in landfill

* Closure of all IS land disposal facilities that have not certified compliance with groundwater monitoring and financial responsibility requirements

* Decision on listing of other halogenated dioxins

* Federal facility inventory and annual inspection requirement

* State owned facilities annual inspection requirement

* TSDF annual inspection every two years begins

* HW export standards to be promulgated

* Notice of exports must be provided to Administrator (EPA must then receive foreign government approval)

* Propose whether to list automotive waste oil

* Notification by tank owners to state due

* EPA shall prescribe form of tank notifications notice

* Study on petroleum tanks due

* Preliminary report from groundwater commission due

* Federal procurement guidelines for tires and other materials

14 MONTHS

* Expiration of state interim authorizations for pre-1984 program

* First Federal agency inventory due (EPA must conduct it if Federal agency fails to)

15 MONTHS

* Prohibition on biodegradable and compressible absorbents

* Notification and recordkeeping requirements on producers, burners, blenders, distributors and marketers of waste-derived fuels

* Decision on listing of 17 specified wastes

* Report to Congress on domestic sewage loophole

18 MONTHS

* Publication of guidelines on criteria that identify areas of vulnerable hydrogeology

* Notification by owners that have taken old tanks (post 1973) out of service

* SQG regulations and Subtitle C requirement

24 MONTHS

* Regulations for hazardous waste used as fuel (standards for blenders, burners, and distributors)

* Regulations for transporters of fuels produced by blending

* Publication of schedule for land disposal ban of remaining listed and characteristic wastes

* Land disposal prohibitions on dioxins and (F001-F005) solvents

* Regulations or guidance documents for double liners and leachate collection systems for new facilities

* Location standards for new land disposal facilities

* Deadline for SI retrofit exemption applications

* Expiration of temporary delisting

* Issuance of additional waste toxicity characteristic

* Effective date of HW export regulations

* Final decisions on whether or not to list automotive used oil

* Promulgate standards for generators and transportation of used car oil

* Study to extend useful life of sanitary landfills

* Study on waste minimization

28 MONTHS

- EP toxicity test revisions

30 MONTHS

- Air emissions standards
- Approved early leak detection standards
- Education of small generators
- Regulations for underground storage tanks respecting release detection, prevention, and correction regulations. Does not include design and financial responsibility standards.
- Standards for design of petroleum tanks due
- Report to Congress on appropriateness of current manifest requirements for SQGs

32 MONTHS

- Land disposal ban on "California" wastes
- Domestic sewage restriction standards

36 MONTHS

- Final determination on applications for SI retrofit exemptions
- Report to Congress on threats to groundwater posed by leaking wastewater lagoons
- Report to Congress on adequacy of Subtitle D requirements to protect human health
- States shall adopt and implement a permit program for their solid waste facilities
- Regulations for new nonpetroleum tanks due
- Study on petroleum tanks due

41 MONTHS

- Revise regulations for subtitle D facilities which receive small quantities of hazardous waste

45 MONTHS

- Prohibition on California wastes, dioxins, solvents and 1/3 listed wastes when placed in Class I wells (hammer)
- Prohibition on land disposal of 1/3 listed wastes

48 MONTHS

- Prohibition on land disposal of soils contaminated with California wastes, dioxins, solvents and 1/3 listed wastes
- Final permits issued for land disposal facilities
- Existing surface impoundments must be double lined (unless it has 1 liner and is located more than 1/4 mile from an underground source of drinking water and is in compliance with groundwater monitor, is a secondary biological wastewater treatment lagoon that meets several performance requirements, or can show no migration at any future time)
- Modify hazardous waste underground tank standards to be consistent with other hazardous chemical tank standards

55 MONTHS

- Prohibitions on land disposal of 2/3 of listed waste

60 MONTHS

- Final permits issued for incinerators

66 MONTHS

- Prohibitions on land disposal of 3/3 of listed waste
- States shall adopt a subtitle D permit program or equivalent or prohibition of small hazardous wastes will be prohibited

96 MONTHS

- Final permits issued for remaining facilities

DIRECTIVE WITHOUT DEADLINES & FREE STANDING AUTHORITIES

- Ombudsman
- Restricted waste storage limitations
- Groundwater monitoring variances for above ground landfills under certain conditions
- Financial responsibility for corrective action
- Financial responsibility for liability associated with underground storage tank controls
- Management considerations in promulgating standards for mining and other 8002 wastes
- Preconstruction ban waiver for PCB incinerators
- Research, Development and Demonstration permits
- Interim status corrective action orders
- Generic listing of wastes that endanger human health and environment
- Authority to control recycling by small generators and recycling practices generally
- F003 citizens suits
- Notice and comment on new delisting applications for consideration of additional constituents
- F003 not limited by due care defense or date of waste disposal
- Public participation in settlements
- Immediate applicability of amendments and restrictions in authorized states
- Encouraged use of recycled materials by federal facilities
- Study on future siting and use of sanitary landfills
- National Groundwater Commission

ROLLING DEADLINES

* Prohibition determinations on new waste listings -- 6 months
* Delay of land disposal prohibitions due to insufficient alternative capacity -- 2 years
* Case-by-case extensions of land disposal restrictions upon demonstration of a binding contractual commitment to utilize alternative treatment capacity
* Termination of IS within 12 months of issuance of new IS requirement (i.e. financial responsibility for corrective action)
* Grandfathering under IS for facilities subject to RCRA due to subsequent regulatory or statutory action
* RDD permits; maximum of 3 yearly renewals subsequent to initial issuance
* Impoundment retrofit for newly covered facilities (i.e. new waste listing) -- 4 years
* Notice of intent to deny or grant a delisting petition within 12 months of receipt
* Issue decision on new delisting applications within 24 months of receipt
* Annual inspection of Federal and State HW facilities
* Biannual inspection of private TSDFs after initial inspection of 12 months post-enactment
* Effective date of final regulations -- may be less than 6 months pending Agency determination

chemicalweek

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Beware the specialties fad

Large chemical companies seem to be tumbling over one another in the rush to get into specialties. The idea of putting more investment into high-value-added products often makes a lot of sense—especially, nowadays, to Wall Street. But such trends can become faddish. Specialty markets are no easier to conquer, and hold, than commodity markets. If herd instincts are allowed to overrule sound business analysis, the result can be financial disaster.

We have recently reported strong, new moves into specialties by such U.S. companies as Arco, Dow, Du Pont, Celanese and Sun. But the warning seems timely this week because of a story in the current issue (p. 40). It tells how the trend to specialties in the U.S. is being echoed abroad. Imperial Chemical Industries, Rhone-Poulenc, Shell and Solvay are among the European giants that recently have elected to move downstream into such businesses as high-fashion yarns, engineering plastics, agrichemicals, and pharmaceutical intermediates.

No doubt most of these moves have been well thought out. But it would be ironic if overcrowding in specialties produced the same problems of overcapacity and low profitability that have plagued European producers in commodity chemicals. Beyond that, our story offers some caveats that are just as applicable in the U.S. as they are abroad:

1. A market that looks promising may turn out to be ephemeral. A market for a specialty intermediate, for example, can fade quickly when a major user finds a way to integrate.

2. Growth rates for specialties are not independent of the economy as a whole. A textile finish can be a big disappointment in a declining market for textiles.

3. High growth rates do not guarantee high profits. Entry of just one more good competitor in a narrow market can be devastating to prices and operating rates—particularly if that competitor does not have to recover high development expenses.

4. A management style attuned to commodities won't work for specialties. It takes a certain mind-set and organization to achieve continual development of new products to fit new applications.

All of this may seem overly obvious, but that is the curse of wisdom. □

What goes down the well

Now that it's getting so costly to dump chemical wastes on land sites, will more and more companies turn instead to deep-well injection?

That question is beginning to worry some environmentalists (p. 58). That means the safety of deep-well injection may soon be an issue with which the chemical industry will have to grapple.

The worry is that the chemicals may contaminate an aquifer that is, or could sometime be, a source of drinking water. The aim of the technology is to pump the waste down to a level far below any such aquifer and into a geologic formation that will prevent its upward migration. And the Environmental Protection Agency, not to mention several states, has established rigorous standards intended to ensure that the geologic formation selected for a well is suitable and that waste does not leak out of the well pipe on the way down.

But there is a loophole. There are no rules to limit what can be pumped down such a well. There is nothing to prevent a well-owner from pumping down highly concentrated organic fluids—of whatever toxicity—or, for that matter, cyanide or chromium solutions.

In theory, that's no problem. But in fact, there are a lot of unknowns when an uncontrolled mixture of synthetic organic chemicals is exposed to subterranean heat that can reach a couple hundred degrees. Gases can form, backpressure can develop, fluids can find fissures, and an aquifer can become poisoned.

In a good system, that's unlikely. But the consequences of an error could be horrendous. That is why some companies that rely on deep-well injection have, on their own, decided to restrict what they inject. In some cases, that means further—and perhaps costly—pretreatment of the wastes.

We think that such caution in the handling of toxic chemicals is both wise and affordable. And we would like to see the industry take the lead in making such caution a matter of standard practice. Loopholes are fun, but there is more mileage in a demonstrated sensitivity to environmental uncertainties. □

The **Chairman**. Doctor, do you think that the disposal rates ought to vary with the degree of hazard associated with the method of disposal?

Dr. **Pirages**. That concept is very appealing but how one would implement it, I'm not certain. The degree of hazard not only depends on the type of disposal, but the kinds of waste being disposed in each one. It also varies among the five different types of land disposal facilities. The hazard at each varies. The kinds of materials disposed at each varies. I think it would be extremely complicated to do it on a degree of hazard basis.

The **Chairman**. Could you both give me your opinion of the various kinds of broad based tax mechanisms that we have before this committee now, most of which have been introduced by one or another of the members on the committee? And we will start with you, Doctor.

Dr. **Pirages**. You mean our opinion on the broad based?

The **Chairman**. Yes. We have a variety of broad based proposals. Assuming that we are going to consider one, do you have any preferences?

Dr. **Pirages**. I have no preference to any specific type except to the extent that the Superfund issue is a societal problem. We all have the benefit from the products that generated the hazardous waste. We all have benefited from disposal mechanisms leading to the problems. I think that it is fair to ask society to cover some of the cost of cleanup. I, therefore, would be in favor of looking at the corporate surcharges, how tax rates, with limitations that we would not overburden small businesses. Also, I would look for an expansion of the feedstock tax.

We certainly would not prefer a waste based tax. But if you have to consider it, a broad based waste generation tax would be our preference.

The **Chairman**. Mr. Fortuna.

Mr. **Fortuna**. I think we have to face the issue of a broad based tax for what it is—a revenue measure; not an incentive measure. As such, the primary emphasis of any broadened tax mechanism has to be reliability of revenue collection; not on the incentives it places on the options for waste management. That issue is dealt with through the RCRA amendments.

If the committee chooses to go to a waste based tax, I think the way to go would be a volume of generation tax or a waste generation tax based strictly on volume—$2 to $5 per ton. Wet weight, and all forms of land disposal would be covered. Discreet and limited exemptions for treatment processes that are permitted under either the Ocean Disposal Act or under RCRA should be allowed.

The **Chairman**. I'm confused by what you said at the start. I realize a broad based tax is a society tax and we are all going to pay it. What did you say about certainty of revenues?

Mr. **Fortuna**. I think the purpose of these broad based taxes, has to be looked on first and foremost as a revenue measure; not an incentive measure to direct waste to certain methods of management. The incentive issue is dealt with under RCRA. This, I think, should be approached directly and forthrightly as a revenue measure and, as such, any considerations of incentives that these mechanisms might have are really secondary to their reliability of revenue collection.

The CHAIRMAN. Now run by me again why you recommend the waste-end tax be assessed on a wet weight basis.

Mr. FORTUNA. I recommend the wet weight for a number of really administrative and substantive reasons. When a Superfund site is cleaned up, you don't just clean up the dry weight materials at a Superfund site. You have to clean up the entirety of it, which invariably and largely involves liquid materials. The liquid medium is what allows the leeching and the migration of these materials.

And, in fact, when an acquifer is contaminated with, say only 50 parts per billion or low parts per million of some halgenated organic and it's declared unfit for human consumption, the dry weight component of that acquifer may be probably less than the one-tenth of 1 percent but it is still unfit for human consumption.

Also it's almost impossible to come up with a standard mechanism or scheme for the assessment and calculation of a dry weight ton.

The CHAIRMAN. And you are satisfied that a wet weight tax is environmentally neutral?

Mr. FORTUNA. Yes, we are.

The CHAIRMAN. Senator Mitchell.

Senator MITCHELL. Mr. Fortuna, in the course of your remarks, you said that some people or some provisions of law—I'm not certain which—equate deep well injection with incineration. And I want to ask a question of both of you about that.

Some of the proposals before us create an incentive to use deep well injection as a disposal method by virtue of the level of tax levied on that procedure relative to alternative procedures. I understand that according to the Office of Technology and Assessment there is insufficient scientific data to now determine that deep well injection is, in fact, a safe method of long-term disposal. And I wonder if either or both of you would comment on that aspect of it.

Dr. PIRAGES. Yes. I would first like to comment that a taxation mechanism that gives a lower rate to deep wells will not necessarily lead to a sudden charge to use deep wells as an appropriate mechanism, for the simple reason that there are limitations as to the types of waste that can be injected into the deep well. You are limited by the number of solids present in the waste. You are limited by the compatibility with the technology used in the well.

I firmly believe—and our member companies who operate deep wells state—that you cannot really put anything different in a deep well than what we are doing now. So it will not be an incentive to go that direction.

I do disagree somewhat with the OTA work. I think we do have considerable knowledge about deep well injection. As long as they are properly managed, properly regulated, and located in appropriate environmental conditions, they have been shown to be a very safe technology. But you have to understand the limitations of that technology, just as there are limitations for all technologies, and work within those limitations.

Senator **Mitchell**. Then if there is no incentive, what is the rationale for charging a different rate?

Dr. **Pirages**. In general, it's because most of the wastes going into a deep well are very, very dilute. They would run probably anywhere from 80 percent or more water rather than actual toxic substances. Because of that, everyone has suggested—and our Institute as well—that it would be appropriate to have a lower rate. Either a lower rate on a wet weight basis or to allow the owner of the facility to determine the percent of solids or the percent of water and adjust the rate accordingly.

Mr. **Fortuna**. Our view on deep well injections, Senator, is that it is an appropriate method of disposal for a rather limited range of waste. Materials that have high inorganic or salt content can be injected, but then only into acquifers that are already brine in constitution.

The problem is that while there may not be a rush of new types of waste streams to deep well injection, there already is a very, very broad range of waste being disposed of into deep well injection, many of which can be managed by alternative means. Thirty-eight percent of all waste being disposed of are organic in content. About 36 percent are corrosive, which can otherwise be neutralized.

The problem with deep well injection is that you really are doing nothing more than propagating uncertainty rather than certainty as to how the wastes are managed. And I think this is probably best reflected in the fact that EPA's preamble to their regulations governing deep well injection under the Drinking Water Act or under the Drinking Water Office eliminated or failed to impose two specific requirements that apply to every other RCRA facility.

First, ground water monitoring. There is no ground water monitoring required for any deep well injection. The EPA used as a basis for that the fact they really weren't certain where the waste migrated so they weren't sure that the monitoring technology or techniques would be that useful because they may not detect where the wastes are going.

Second, there are no financial responsibility requirements under the Act or under the Drinking Water Act or under the Drinking Water Office regulations for deep well injection, which are required for every other method of management.

If, indeed, this was such a certain method of management, why weren't these requirements imposed as well. While it is true that, as Senator Bentsen pointed out earlier, that we have not had the frequency of deep well injection problems as we have had with other methods of disposal. But when we've had them, they have been lulus. The one deep well injection site on the Superfund list, in Erie, PA, according to the USGS has a zone of contamination that encompasses parts of Ohio, Pennsylvania, Ontario, with a suspected lake bottom plume in Lake Erie. The first plume of contamination was discovered 4½ miles away from the original site of injection. Now people will come back and they will say, well, that was an old well; that was before the standards; that was before the new regulations; and if we had the new regs, that wouldn't happen. Well, that may be so and that may not be so. We are essentially in the same situation with deep well injections today as we were with the landfills in 1976. Everybody was saying all we need are more casings, more concrete, more liners and it will work. And that's what we tried for landfills. It didn't work there. It hasn't worked—we don't believe it will work for deep wells either.

The **CHAIRMAN**. Senator Bentsen.

Senator **MITCHELL**. Mr. Chairman, may I just ask Dr. Pirages to submit in writing further detail on her statement on the difference between waste generation tax and waste disposal. I would appreciate that because it was supportive of the legislation. I wanted to get a little more detail on it from her.

Dr. **PIRAGES**. You mean in terms of the organic and inorganic?

Senator **MITCHELL**. Yes.

Dr. **PIRAGES**. I have covered certain points in the written testimony, but I will provide more information.

Senator **MITCHELL**. Thank you.

[The letter from Dr. Pirages follows:]

ICWM

Institute of Chemical Waste Management

1730 Rhode Island Avenue, N.W., Tenth Floor, Washington, D.C. 20036 • 202/659-4613

May 8, 1985

The Honorable George Mitchell
United States Senate
Washington, D.C. 20510

Dear Senator Mitchell:

This letter is in response to your request for more information on disposal practices for organic and inorganic wastes and the impact a waste-disposal tax may have on waste management activities.

As discussed during the April 26th hearing of the Senate Committee on Finance, there are two basic categories of waste: organic and inorganic. Because of the mandates that Congress placed in the Hazardous and Solid Waste Amendments of 1984 (HSWA), increasing volumes of organic waste will be treated and incinerated in an effort to destroy the hazardous constituents. Organic compounds can be treated to yield only carbon, oxygen and hydrogen. Appropriate technology currently exists to treat all but a few extremely recalcitrant chemicals. Even with "stubborn" compounds, the limitations on destruction are not technological, but economic.

The second waste category poses more difficult management problems. Inorganic compounds cannot be destroyed. They are found in all living and non-living components of our planet. They are elements such as sodium, potassium, sulfer, iron, lead, mercury, copper, etc. Because these inorganic wastes cannot be destroyed, management options are limited to treatment processes that render the inorganic compounds immobile and thus less hazardous. These treatment processes stabilize or solidify the waste constituents, preventing movement of the hazardous constituents from the treated residues. The treated residue can be placed safely in land disposal facilities (e.g., landfills and surface impoundments).

Any manufacturing firm in this country that uses inorganic compounds or metals in developing a product will generate inorganic wastes. Examples include the automobile industry, machinery manufacturers, electroplating businesses, basic metal producers and electronics industries. Because of the presence of metals and other inorganic compounds, these industries have no other desirable options for managing their wastes except to treat the material and then to place the solidified wastes into land disposal facilities.

If unconcerned about environmental threats, there is a loophole for generators of these wastes--dilution and discharge to public waterways and sewer systems. Current standards established for Safe Drinking Water Act and Clean Water Act regulations are not available

An Institute of the National Solid Wastes Management Association

for the diverse elements found in inorganic wastes, thus by dilution techniques these wastes can be legally discharged into waterways and sewage systems properly treated. The attached article from the Environmental Reporter supports our concern about this loophole.

Treatment of inorganic wastes is costly. As the Agency continues to enforce RCRA regulations, generators will opt for the least costly method of waste management. As long as dilution and discharge remain legal options, generators of inorganic wastes can begin to dispose of their wastes in that manner. In fact this trend is illustrated in a recent survey of the Chemical Manufacturers Association (CMA). The volume of hazardous wastewater generated by CMA members increased 8% between 1981 and 1983 and was discharged to public sewage systems. For that same time period the amount of waste incinerated, treated or land disposed decreased 30%, 63%, and 70% respectively.

There are many problems associated with a waste disposal tax; one is the conflicting message being sent to EPA by Congress. In the 1984 Amendments to RCRA, Congress instructs EPA to restrict land disposal of certain wastes, thus reducing the volume and hazard level of wastes that will be allowed in land disposal facilities. Now it is being proposed that Congress instruct EPA to raise a set amount of revenue for CERCLA by taxing the management practice for which the Agency will be restricting use.

Also, I question whether it is appropriate to ask the Internal Revenue Service (IRS) to begin the task of regulating waste. If Congress imposes a disposal tax that differentiates among management options by different tax rates, then the IRS may have to adjust tax rates in a manner that forces particular types of management. How wastes can be managed depends on limits of the management technology and characteristics of the wastes. The need to generate specific amounts of revenue may force the Administration and the regulated community into management practices that are inappropriate for any particular wastes.

Finally, the RCRA program is just beginning to mature. The regulations are just being implemented and enforced. Both the Agency and the regulated community are attempting to implement the 1984 Amendments expeditiously. By imposing a cumbersome and complex taxing system on the program, limited resources and enforcement effort will be diverted from the regulatory program into collecting revenue. I urge you and your colleagues to allow the RCRA program to develop further before imposing a taxation scheme on the system.

I hope this letter addresses the concerns you raised during the Committee hearing. If you and your staff have further questions, I would be pleased to discuss the issue with you at your convenience.

Sincerely,

Suellen Pirages

Suellen Pirages, Ph.D.
Director

The **Chairman**. Senator Bentsen.

Senator **Bentsen**. Well, I think that's very interesting and helpful testimony. But what we are trying to do when we talk about putting it on a wet weight basis but giving them the alternative of dry weight, we are trying to get a better correlation, if we can, between the waste and the tax. And if you do it on wet weight on a volume basis, you've got about 60 percent, as I understand it, going into the injection wells.

And, therefore, they carry about 60 percent of the tax without the alternative of using a dry weight. And yet, as I understand it, of your Superfund sites, you only have approximately 1 out of 800 that is a deep well injection. So if you are going to put a 60 percent tax to be carried by deep well injections and yet you are only seeing one of those that is listed as a Superfund site out of 800 or so, it doesn't seem to be a direct correlation. You don't seem to be accomplishing your objective.

Now I know that it is a little more difficult to compute that dry weight. But if the burden is on the company itself, and it chooses to do so rather than taking the wet weight, then I don't think we ought to be concerned about that. And, of course, they are subject to the audit procedure. How would you respond to that.

Dr. **Pirages**. Which of us? Both of us?

Senator **Bentsen**. I don't care. You are both articulate and know the subject.

Mr. **Fortuna**. I just think it's also very difficult to enforce such a mechanism. Everybody will have a different basis for computing dry weight ton. Which one is the right one?

Senator **Bentsen**. We put the burden on them.

Mr. **Fortuna**. Right.

All the 80 deep well injection facilities are operators who have 80 different methods for calculating dry weight ton. What about compounds that are hydrous compounds that have water bonded to them? Are those included? How do you calculate them?

There are just a number of technical difficulties in calculating dry weight ton. Many of our members have tried to do it and have found that it cost more to calculate out what the dry-weight-ton basis is than the tax itself.

Senator **Bentsen**. Then they shouldn't do it. But they would have that in the alternative to do. It's their choice.

Mr. **Fortuna**. But if we come back to the premise that the aim of a broad based tax is reliability of revenue, and we come to the situation where we have 50 different ways of calculating dry weight ton, which is one of the reasons why we have such low revenue collections under the current postclosure fund—which is a flat tax waste-end system based on dry weight—we have no standard system for calculation of dry weight.

Senator **Bentsen**. I would not argue with you at all that what we want is a broad-based tax. That's obvious from what we have proposed in the Bentsen-Wallop proposal. We're trying to accomplish that. And I look at the waste-end approach as a complimentary thing but certainly not a linchpin to this deal. And, frankly, I don't see the revenue being raised that the administration is talking about.

Mr. **Fortuna**. Well, I guess we have a concern with that, too. That's why if you simply go with wet weight, you do not have any uncertainty or argument as to what's the volume of materials that should be subject to the taxes. When the Treasury would try to go around and enforce a dry weight ton basis, they are going to have to be looking at 50 different—perhaps 50 or 80—or every unique formulas for each facility as to what they calculated their dry-weight basis would be.

I just think that does very little to enhance the certainty of revenue collection and the enforcibility of such a system. Let alone all the other incentive issues involved. Moreover, dry weight simply bears no direct relationship to toxicity, mobility, persistence or any other environmental criteria.

Senator **Bentsen**. Well, the burden of proof is on the claimant on that. Then I would not worry too much as long as they have the option.

Dr. **Pirages**. If I could follow up on that. There are instances, for example, the State of Louisiana has a similar bill which, as you suggested, gives an option for the operator to do wet weight or dry weight. They have gone to a total solid measurement which is fairly standard among the people engaging in deep well injection. I think that by giving them the option, you are allowing a facility that is handling very dilute materials to pay according to the level of hazard.

For example, many of the deep well injection solutions are simply rinse waters. When you have a large tank that has been carrying powders or liquids, you have to rinse that tank out before you can get your other load and transport the other hazardous waste. And much of the water going into the deep well, much of the waste, are just the dilute rinse waters from cleaning out tanks, it has very, very small components of solids or even hazardous constituents.

Mr. **Fortuna**. Mr. Chairman, may I just follow up on the dilution for a second?

The **Chairman**. Yes.

Mr. **Fortuna**. I think the fact that most deep well injected waste are dilute is really secondary to the fact of what type of materials you are dealing with. If what is going down the well are metals or organics that do not biodegrade and have persistent periods of hundreds of years, it really matters very little because those materials will build up, migrate and biocumulate so that the dilution issue is really very much contingent upon what type of materials you are talking about; not just dilution factor by itself.

Senator **Bentsen**. I have some other questions but I'll pass.

The **Chairman**. Senator Chafee and then Senator Wallop.

Senator **Chafee**. I have no questions, Mr. Chairman.

The **Chairman**. Senator Wallop.

Senator **Wallop**. Mr. Chairman, my question is posed more toward the question of whether or not we can greatly increase the size and scope of the program in any near-term fashion. Are the technical people there? Is the state of the art sufficient that even if we did that we would know what it was we were up to? I direct it to you both.

Dr. **Pirages**. Well, I think that in terms of the technical capabilities, yes, they probably are there. If EPA were given additional funds to bring on a qualified staff that they would find the people they need to staff the program.

In terms of the actual level of the funding, I think that the final bill will end up is some sort of a compromise between what the EPA says they can handle, which is a very minimum level, and perhaps what the Senate Environment and Public Works has authorized which right now seems to be the most appropriate.

Mr. **Fortuna**. Having worked on Superfund in 1980 over on the House side, we knew at that time that the first 5 years were really just a downpayment. I think, though, what we are getting ourselves into—the problem we are getting ourselves into is trying to continually shoehorn maybe 10 to 15 years worth of funding into a 5-year timeframe. I think we really have to look on this program as 15, 20, 25 year program, maybe longer, and revisit it in 5-year increments and not think that it's going to end every 5 years and therefore get everything done in 5 years and get all the funding in 5 years.

I think it's true that we probably need and could use $10 billion; we could use $20 billion; we could probably use $50 billion in the program. But I think the most prudent approach is really to go for the range of about $7 to $8 billion this time around, broaden the base, increase the feedstock somewhat, increase the general revenues in light of the broad expansion of coverage of Superfund, and take the pulse on it in 5 years.

Senator **Wallop**. Well, I'm a little distracted by this whole thing. As I listen to the two of you, you display significant differences in your approach and acceptance of just the one technology of deep wells. And what I—what really seems to me to be key in all this is by all means have adequate amounts of money to advance technology and the state of the art, but not to spend a lot of money doing something we are going to have to undo in a little while. As I listen to this and read the testimony that occurred in the Environment and Public Works Committee and the OTA report, one of the things that concerns me is that we are in perhaps the process of creating new hazardous waste dumps by cleaning up old ones. It is a distraction to think that we would accelerate that process by having more money rather than putting money into developing state of the art technologies that are reliable and don't come to us with the dimension of difference between two very competent, very capable, well reputed people.

Dr. **Pirages**. I think perhaps the one thing both Mr. Fortuna and I agreed on is that we do have the technology to treat Superfund waste and that it is not appropriate to simply move them from one site to another. We have often encouraged EPA, and even the Congress, that what they need to do is to develop a mechanism so that we can have more expeditious permitting and siting of the technologies that can be used to treat Superfund waste.

The main problem from my perspective is not a lack of funding, but is the inability to get a permit for new high technology facilities and the inability to sight and build that facility in an expeditious manner.

Mr. **Fortuna**. Our difference on deep well injection reflect on perhaps our views or membership views of the permanency of that technology and the extent to which it provides certainty that the materials will not come back to haunt us at some point in the future.

But I think despite the different emphasis in perspective of our group we are both in agreement that a waste-end fee system is more trouble than it's worth, has the potential to present more disincentives than incentives for proper treatment and permanent management of hazardous waste. That, indeed, any broadening of the tax base should have a revenue perspective first and foremost and let's just leave the incentives to RCRA.

Senator **Wallop**. That's exactly the point that I was trying to get at. And I think that's the purpose behind Senator Bentsen and my approach to this. The best incentive that we presently have is the collection penalty system that occurs after cleanup. In many respects, that is the one thing that is going to bring people to heel, if those are really well done and are purposeful.

I thank you, Mr. Chairman.

The **Chairman**. Are there other questions?

[No response]

The **Chairman**. If not, thank you very much.

Next we will take a panel of Dr. Robert Forney, Jan Anthony, John Paul, and Charles Eddy.

Dr. Forney.

STATEMENT OF DR. ROBERT FORNEY, EXECUTIVE VICE PRESIDENT OF DUPONT, WILMINGTON, DE, ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION, WASHINGTON, DC

Dr. **Forney**. Thank you, Mr. Chairman.

Members of the committee, my name is Robert Forney.

The **Chairman**. I again will say to all of the witnesses that your statement in its entirety will be put in the record, and you will be limited to a 5 minute oral presentation.

Go right ahead.

Dr. **Forney**. I'm an executive vice president of the Dupont Co., and I'm representing the Chemical Manufacturers Association here today, of which I am a member of the board of directors.

While my written testimony addresses issues related to Superfund other than financial issues, my remarks this morning will focus on mechanisms for financing Superfund and just have three main points.

First, although the chemical industry overall is moderately healthy, there are certain sectors that are in serious trouble and the world trade position of those sectors and the industry as a whole is deteriorating.

Second, Superfund taxes do impede the competitiveness of sectors of the industry, particularly, petrochemicals, and undercut the earnings of the products on which they are imposed.

And, third, adequate Superfund revenues can be raised without unduly damaging U.S. industry and recommendations are made in our testimony for your consideration.

I would amplify the first point. The chemical industry has been subject to more than a decade of price swings, market dislocations and uncertain supply conditions for its vital petroleum and hydrocarbon feedstocks. In recent years, the overvalued dollar has made exports difficult and added very greatly to import competition.

Another factor that we've had to contend with is the rise of petrochemcial industries in countries with vast hydrocarbon resources at a time when there is worldwide over-capacity in many basic chemical lines.

Overall, the U.S. chemical industry has managed to cope with this by investing in research and in process and product improvements. But the industry's international position is eroding. While our positive contribution to the balance of trade still shows a surplus of more than $10 billion, it's down by more than one-fourth from the record that it reached in 1981.

With this background, let me turn to the second point—the impact of Superfund taxes. The most distressed part of this industry is the petrochemical industry. Petrochemical manufacturers make these 11 primary petrochemical building block chemicals that are taxed under Superfund as well as a large number of the derivative products.

Products of the U.S. petrochemical industry by and large compete in world markets with foreign products that do not bear this tax. The feedstock taxes cannot be passed along in the prices of U.S. products because customers both here and abroad would simply turn to foreign suppliers of these same products.

The inability to reflect the tax in prices means that it is reflected in the earnings of this already very, very depressed sector. Losses in 1982 on the nine major petrochemical feedstocks amounted to some $91 million. And this increased to losses of $188 million after the tax was imposed. And despite improved business in 1983, the loss still came to $100 million.

And, finally, as I stated to this committee last year, CMA supports a reauthorized Superfund at a level of approximately $5 billion over 5 years, the amount that the administration, through Mr. Thomas, has said can be efficiently spent.

We believe the financing should come from additional additions to the fund of about $307 million in current feedstock taxes, $307 million from a dry weight tax on hazardous waste disposed, about $200 million in cost recoveries and interest, and about $175 million from general revenues.

Raising part of the funds from a waste-end tax would be more equitable, we believe, than higher feedstock taxes. We do submit, however, that some of these waste-end tax proposals, including the administration bill, have very, very serious faults. They would tax waste generation instead of waste disposal, a topic you've heard about already this morning. And they would tax wet weight instead of dry weight. They would have a number of very adverse consequences, the worst of which is that there would be a tax on highly dilute waste water. This would not only be unfair, it would really make no environmental sense whatsoever.

Now if Superfund should fall short because of failure to approve the plan that I have outlined or because of a mandated increase in the fund beyond the level that the administration says can be efficiently spent, we would support a broad based tax to make up the difference. We are pleased that broad based tax proposals have been introduced by several members of this committee—Senator Bradley, Senators Mitchell, and Chafee, Senators Bentsen and Wallop. Measured against the several criteria that the CMA has developed for a broad based tax——

The **Chairman**. Could you wind down, Doctor?

Dr. **Forney**. I'm within 15 seconds, Senator.

The Bentsen-Wallop proposal, which is a transaction type tax on manufactured products, appears to be the closest to what we would suggest. We are confident that an acceptable proposal can be developed.

I appreciate the opportunity to testify and I'm available for questions.

[The prepared written statement of Dr. Forney follows:]

STATEMENT OF

ROBERT C. FORNEY

EXECUTIVE VICE PRESIDENT

E.I. DU PONT DE NEMOURS & COMPANY

ON BEHALF OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

The Chemical Manufacturers Association is a non-profit trade association whose member companies represent more than 90 percent of the productive capacity for basic industrial chemicals in this country. In several appearances before congressional committees since November of 1983, we have stressed both our strong support for an effective national program to clean up problem waste sites, and our commitment to play a cooperative and constructive role in the process leading to reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as Superfund.

On April 2, 1985, CMA submitted its views on Superfund reauthorization to the House Committee on Energy and Commerce. That statement, which presents this Association's views on funding and the broad scope of issues raised by the reauthorization of Superfund, is attached hereto as "Appendix A".

Our testimony will focus primarily on the funding aspects of reauthorization. Before examining the impact of CERCLA taxing mechanisms on the chemical industry, however, we would like to discuss briefly the revenue needs of the bill reported out of the Senate Environment and Public Works Committee, S. 51. In this regard, our primary concern is with the overall fund size provided for in S. 51 -- $7.5 billion over five years. As stated previously, CMA supports reauthorization of Superfund at a level of up to $1 billion per year, the amount that EPA says it can spend effectively. We do not believe that the problem of cleaning up inactive hazardous waste sites will be solved by putting more money in the Superfund program than can be used effectively.

Among the programmatic aspects of S. 51 that impact funding needs, three are of particular importance -- the scope of Superfund, victims assistance programs and the provisions on health-related activities. First, we need to keep Superfund focused. Except in major emergencies, the statute should not be used to address such concerns as releases resulting from mining wastes or the lawful application of pesticides; releases from residential, business or community structures not due to hazardous waste facilities; releases of naturally occurring substances in their natural form; releases covered by and in compliance with permitted discharges, or releases of pollutants and contaminants.

S. 51 would focus more on the priority of cleanup of inactive hazardous waste sites and eliminate several of these categories from authorized Superfund response unless an emergency exists. We do not believe, however, that S. 51 goes far enough in focusing the use of Superfund resources. Instead, we command the approach taken in the Administration's Superfund reauthorization bill, S. 464.

A second aspect of S. 51 that will divert resources from waste site cleanup is the provision for up to $30,000,000 per year for a victim assistance demonstration program. We are concerned that such a proposal could develop into an uncontrollable entitlements program that would be extremely costly for the nation.

We call to the attention of this Committee a report prepared by a scientific panel of Universities Associated for Research and Education in Pathology (UAREP). This report, the first comprehensive study of the health effects on populations around waste sites, concluded "There is little scientific evidence that chemical disposal sites have had serious effects on the health of populations living near them." UAREP nevertheless strongly urges prompt remedial action to reduce the potential for health effects. The results of the UAREP study raise fundamental doubts about the need for a new federal program to compensate persons allegedly injured by waste sites.

Now we return to the main thrust of our testimony -- the funding mechanism to be chosen for CERCLA. In testimony before this Committee last September, CMA expressed support then, and we support now, a 5 year reauthorization of Superfund at an annual funding level of up to $1 billion. To raise these revenues, CMA supports a funding mechanism that would provide for (1) continuation of the present Superfund feedstock taxes at current rates to provide $307 million per year; (2) enactment of a national tax on the disposal of hazardous waste at $50 per dry weight ton, or equivalent to produce $307 million per year; (3) support from general revenues contributions of about $175 million per year; (4) and cost recoveries and interest on unexpended fund deposits to provide just over $200 million per year. EPA projects that cost recoveries in the early years of this period will be below the $210 million level, but will build gradually to an amount in excess of $300 million per year. To provide level funding over the 5 year period, CMA proposes that EPA be given authority to borrow against amounts which will eventually be paid as cost recoveries.

We are pleased that members of this Committee and the Congress have expressed concern about the impact of increased Superfund taxes on the chemical industry. This industry is facing serious challenges from several forces, including increasing product costs, reduced sales margins, and foreign competition. Increasing the current CERCLA feedstock tax rates, as has been proposed, would produce severe, adverse economic consequences and would impose even greater competitive pressures on the industry in the international arena. Moreover, ill-advised waste-end taxes of the type included in the Administration's bill would exacerbate the undesirable effects of the feedstock tax on the chemical industry.

BACKGROUND

The chemical industry is the third largest of the manufacturing industries in the United States. It provides raw and intermediate materials that are used to make 63,000 commercial products for agriculture, business and individual consumers. It supplies products to such diverse customers as the mining, ceramics, primary metals and paper industries. The diversity of the industry is further shown by its production of synthetic rubber, fertilizers, pesticides, dyes, man-made fibers, and plastics. The industry uses as raw material and fuel about 6.7 percent of the nation's liquid petroleum consumption and over 10 percent of its natural gas consumption.

The U.S. chemical industry overall has been moderately successful in adjusting to such major challenges as the great change in energy pricing since 1973, an overvalued U.S. dollar and the high level of investment around the world in competing chemical facilities. Sales amounted to $211.3 billion in 1984, and have shown an average gain of 7.4 percent per year in the last five years. Volumes produced have gone up an average rate of 1.6 percent over the same period. The industry has increased capital expenditures about 7.4 percent per year over the last five years. Employment has declined from a peak of 1,109,000 in 1981 to 1,061,000 in 1984. The industry continues to invest in innovation as reflected by an average annual increase of 16.4 percent in spending for research and development.

TRENDS IN INTERNATIONAL CHEMICAL TRADE

However, the overall performance of the industry is clouded by the poor performance of some sectors of the industry under current world trade conditions. This is illustrated by trends in the chemical industry trade balance. The industry has typically exported a significant part of its production. But the share of sales going abroad dropped from 13.0 percent in 1980 to 10.4 percent in 1984.

The industry is losing its competitive position versus foreign products in both domestic and export markets. The contribution of the industry to the nation's trade balance is declining. The record $14 billion chemical surplus in 1981 declined 26 percent to $10.3 billion in 1984. This has serious implications for the U.S. overall trade balance which had a deficit in 1984 of $123 billion.

The most distressed sector of the chemical industry and the one particularly influenced by international competition is petrochemicals. It makes the primary basic building block or "feedstock" chemicals which are used to make derivative products (Exhibit I). The petrochemical feedstocks taxed under Superfund fall into this category. Producers of these petrochemical feedstocks are losing export and domestic markets and many are losing money on these products.

A 1982 report prepared by the U.S. Department of Commerce predicted a pessimistic future for petrochemicals. [*] The report projected a gradual decline in the competitiveness of the U.S. petrochemical industry as hydrocarbon rich countries, including the Persian Gulf states, Canada, Mexico and Indonesia, bring new capacity onstream. This new capacity will lead to a major restructuring in the worldwide petrochemical industry which, the report says, is already underway and will gain momentum in the next two decades.

The Department of Commerce's 1985 U.S. Industrial Outlook reports petrochemical shipments totalled $90.6 billion in 1984. The positive petrochemical trade balance declined from $8.6 billion in 1980 to $5.5

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[*] U.S. Department of Commerce, "A Competitive Assessment of the U.S. Petrochemical Industry" (August 31, 1982).

billion in 1984, a drop of 36 percent. At the same time, petrochemical imports have been growing at the rate of 17 percent per year since 1980. In addition, the petrochemical share of the overall chemical trade balance has declined over that same period from 62 percent to 53 percent. These and other measurements show that this segment of the industry is under severe competitive pressure throughout the world.

We emphasize that although the petrochemical industry is severely distressed, there are many operations in this industry that are capable of competing in world markets, if provided a reasonably favorable climate. The jobs and products represented by these businesses are substantial, and we should mount a great effort to preserve those that are efficient enough to compete. It is important not to further impede this industry by imposing on it domestic burdens not borne by foreign competitors.

FEEDSTOCK TAXES DAMAGE U.S. COMPETITIVENESS

Increased Superfund feedstock taxes would seriously aggravate the deteriorating condition of the U.S. petrochemical industry. In this highly competitive industry, newly imposed costs, whether raw materials, labor, construction costs, or Superfund taxes, cannot be passed through to the consumer in the export or U.S. market. Petrochemical prices are determined by competition, not by costs. Many foreign competitors selling in export markets, including the United States, are using natural gas and other feedstocks as a raw material at 1/6th the cost of that in the United States. Even allowing for higher transportation costs to export markets, U.S. producers have great difficulty in being competitive.

The petrochemical feedstocks taxed under Superfund are generally not significant in world trade. However, their downstream derivatives, which for integrated producers in the U.S. are burdened with feedstock taxes, are traded in large volumes. Ethylene is a good example. The U.S. International Trade Commission reports that ethylene production in 1983 accounted for over 13 percent of all the petrochemicals manufactured. Over the first two and one quarter years of CERCLA taxation, 40 percent of the petrochemical feedstock tax was paid on ethylene. Ethylene, however, is exported in the form of downstream products such as polyethylene resins. These products are competing against foreign products manufactured from feedstocks on which no tax is assessed.

The same factors apply in the U.S. market. It is often the feedstock derivatives that are imported, not the taxed petrochemical feedstocks. U.S. purchasers of the derivatives can buy them from either domestic or foreign producers. The U.S. producer of these downstream products finds it is, therefore, prevented from passing through the cost of feedstock taxes because of competition from untaxed foreign producers.

Recent price trends of the taxed feedstocks provide further evidence of the inability of manufacturers to pass through Superfund taxes. According to a study done for CMA by Price Waterhouse & Co., average prices for taxed petrochemical feedstocks were 25.1¢/pound in 1981, 20.1¢/pound in 1982 and 19.7¢/pound in 1983. Data from the Bureau of Labor Statistics indicate that, in 1984, this price has continued to decline to the 17-18¢/pound range. For inorganic feedstocks, the average prices were 7.6¢/pound in 1981, 7.7¢/pound in 1982 and 7.0¢/pound in 1983.

Under these conditions, even the present level of feedstock taxes undermines the competitiveness of the petrochemical sector. It is, therefore, extremely important that petrochemicals not be burdened with taxes higher than those in the present law. These taxes are cumulative with other cost factors affecting the industry's international competitiveness.

A group of 31 inorganic feedstock chemicals is also taxed by CERCLA. The trade situation for these commodities is similar to that in the petrochemical sector. The majority of these inorganic chemicals are contained in two SIC codes, (SIC 2812 and SIC 2819). Since 1980, the positive chemical trade balance for these two product sectors, including untaxed inorganic products, has dropped 31 percent from $727 million to $503 million. New taxes imposed on these products would not be passed through to customers. As in the case of petrochemicals, inorganic chemicals should not be burdened with taxes higher than those in the present law.

Feedstock taxes cannot be shifted to profitable sectors of the industry. In this nation's industrial economy, each product or group of products must be self-sustaining. Those that are not must be shut down. No company could serve well its employees or shareholders if it permitted an unprofitable line of business to reduce the overall competitiveness of the organization. The Congress is urged to consider fully the economic position of individual chemicals before imposing new costs on them.

ECONOMIC IMPACT OF SUPERFUND TAXES

In order to gain a more quantitative insight into the economic health of relevant sectors of the U.S. chemical industry and of the impact of Superfund taxes, a survey of 26 major producers of nine of the presently taxed petrochemical and inorganic feedstocks was just completed by Price Waterhouse & Co. Pre-tax earnings in the petrochemical sector were found to be negligible while those in the inorganic sector showed a significant decline.

The survey shows (Exhibit II) the distressed state of earnings for the surveyed petrochemical feedstocks and the serious downtrend of earnings for 31 inorganic feedstocks. [*] The serious condition for the petrochemicals is depicted on Exhibit III. The 1982 losses on the nine petrochemical feedstocks amounted to $91 million which increased to a loss of $188 million after estimated CERCLA taxes. Similar results with a loss of $100 million were obtained in 1983 despite an improvement in business conditions.

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[*] Price Waterhouse, "A Comparison of Sales to Earnings Ratios for Chemical Companies for Their Overall Sales and Sales of Products Subject to CERCLA Taxes" (March 15, 1985).

Pre-tax operating earnings for the 31 taxed inorganic products are somewhat better, but have declined from $415 million in 1981 to $220 million in 1983, a 47 percent decrease. The earnings to sales ratio declined from 13.4 percent in 1981 to 6.9 percent in 1982, and to 6.8 percent in 1983. This is not an acceptable rate of return. Imposition of higher Superfund taxes would only worsen this trend.

A study by DeWitt and Company, confirming the difficult situation for U.S. petrochemical producers, points out that profit margins in 1982 and 1983 were negative.[*] Much U.S. petrochemical capacity has been retired, and a substantial amount of existing capacity is in danger of being permanently shut down if new Superfund tax levels like those in H.R. 5640 last year are imposed. Thirty thousand petrochemical jobs would be lost. Another 120,000 jobs would be at stake that are dependent on petrochemical jobs. This trend is confirmed by Bureau of Labor statistics which show that 43,000 petrochemical jobs were lost in the period 1979 to 1983 and that many more are threatened by worldwide competition.

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[*] DeWitt and Company, "Superfund Economic Impact (July 17, 1984).

WASTE-END TAXES

As mentioned above, CMA has proposed a $50 per dry weight ton waste disposal tax intended to raise $307 million dollars per year. Some part of this tax must be borne by the already taxed feedstock products, and they would be disadvantaged additionally in export and domestic markets. Nevertheless, CMA has supported such a tax since it is reasonably related to the purpose for which the money is needed and, in addition, more equitably expands the base of taxpayers to other industries involved in hazardous waste sites. We believe that the Moynihan-Bentsen bill, S. 14, contains an equitable waste tax proposal. Although the tax rates are specified on a wet weight basis, an alternative dry weight computation is provided at the reasonable rate of $50 per ton.

However, some proposed waste taxes would only aggravate the inequity of the current feedstock taxes. For example, the Administration's bill, S. 494, would tax waste management rather than disposal and, in particular, would tax highly dilute waste water in certain treatment facilities. This proposed tax would raise far more money than EPA intends to raise or can reasonably spend. Even if the tax rates were revised, a tax structure which imposes a tax on dilute waste water would seriously penalize a few companies that have large waste water treatment facilities. These facilities were installed at great expense to provide environmentally sound waste management. Such a tax makes no economic or environmental sense. It would force companies, such as Du Pont, to make unproductive investments in alternative waste handling units to avoid the tax with no environmental gain whatever.

There is yet another strong reason to oppose the Administration's waste generation tax. One central justification for adopting a waste tax is to distribute the Superfund tax burden throughout the economy to all who have contributed to problem sites, rather than to concentrate that burden on two or three industry groups. Although the Superfund tax payments of many companies would be increased under the Administration's proposal, a disproportionate burden of the total Superfund taxes would continue to fall on the chemical industry because of its heavy reliance on waste water treatment facilities.

CMA, thus, strongly opposes the Administration's effort to tax waste water as highly inequitable and exacerbating the effect on trade of existing feedstock taxes.

NEED FOR GENERAL REVENUES

As stated above, CMA's proposed funding mechanism includes a general revenue component of about $175 million per year. We believe that a substantial general revenue contribution is appropriate for reasons of equity and sound public policy. The chemical industry's contribution to the Superfund far exceeds our contribution to problem waste sites. This inequity will worsen if general revenues are not provided.

The problems associated with inactive hazardous waste sites reflect more than 100 years of industrial development in the nation. Hazardous wastes have been, and will continue to be, generated by a wide range of industries, business concerns, government agencies and defense installations, municipalities and scientific facilities. The problem is societal in scope and the mechanisms for coping with it should reflect this fact, just as the benefits of resolving the problems will inure to all elements of the country. As Congress recognized when it enacted Superfund in 1980, only through the use of general revenues, both state and federal, can this societal responsibility be fairly discharged.

The Treasury has already acknowledged that broadening the Superfund tax base is best achieved by continuing substantial general revenue contributions as a part of the Superfund funding mechanism. Testifying before this Committee last September, Mikel Rollyson, Tax Legislative Counsel of the Treasury Department, stated in answer to the questions of Senator Bentsen:

> Mr. ROLLYSON.
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> * * *
>
> "But I think to respond to your point, and also to respond to our concerns about the administrability of the tax, if the committee is interested in looking at a significantly broadening of the base for this tax, which I think is one of the principal concerns.

Senator BENTSEN. You have heard it around this table.

Mr. ROLLYSON. Then I think that broadening is better obtained by, in effect, larger appropriations from general revenues.

* * *

So I would suggest that if you are interested in a great expansion or broadening of the base for the tax, that you would consider seriously looking hard at larger shares of general revenues."

Hearings on Superfund Issues,
Senate Commitees on Finance, 98th
Congress, Second Session, September
19 and 21, 1984, page 85.

BROAD BASED TAXES

CMA believes that the chemical industry should not bear either feedstock or waste-end taxes beyond those levels recommended above. Therefore, to the extent that the items described above - feedstock and waste-end taxes, general revenues, cost recovery and interest - do not yield a fund of the size eventually authorized by Congress, CMA supports a broad-based tax - one which taxes a substantial part of U.S. industry at a low rate - to make up the difference.

CMA has been working closely with the American Petroleum Institute (API) and the staffs of several Senators to develop the concept of a broad-based invoice-type transaction tax for Superfund which we call the Manufacturer's Environmental Excise Tax ("MEET"). CMA agrees with API that "MEET" would be an acceptable broad-based tax to our member companies. But our approval of "MEET" should not preclude the consideration of other alternatives that would satisfy our basic criteria of a broad-based tax.

CMA believes that any broad-based tax to finance the Superfund program should be tested under the following basic criteria:

- Revenue Potential

  The proposed tax should provide predictable and adequate levels of revenues to finance the cleanup of problem waste sites.

- Equity

  The tax must be very broadly-based. EPA identification of responsible parties at National Priority List (NPL) waste sites has demonstrated that numerous industries, and over four thousand companies, have contributed waste to these problem sites. Fairness dictates that all these industries should also contribute to the cleanup of these sites through their tax payments.

- Trade and Economic Impact

  Any proposed tax should have a neutral or minimal impact on trade. The tax should not apply to exports. It should apply to imports or be imposed at such a low rate that it does not disadvantage domestic manufacturers with respect to imported products.

- Avoidance of Repetitive Taxation of Same Transaction

  The proposed tax should avoid any repetitive taxation of the same transaction ("cascading of tax payments").

- Environmental Nexus

  Any proposed tax should have at least some environmental nexus with the problem waste sites for which the tax is required. Since a wide spectrum of manufactured products appears at problem waste sites, a tax that would apply broadly to manufacturing would supply the requisite environmental nexus

- Administrative Feasibility, Cost And Number of Taxpayers Affected

  The proposed tax should be simple and inexpensive to administer and to collect. We believe that a tax which applies to all manufacturers would not impose an undue administrative burden.

We submit that these are the basic criteria by which any proposed broad-based tax should be judged. Several members of this Committee have introduced bills to establish a broad base funding mechanism for the re-authorization of Superfund. These include Senator Bradley (S.

596), Senators Mitchell and Chaffee (S. 955), and Senators Bentsen and Wallop (S. 957). We view the introduction of these bills as a positive development for several reasons: First, these bills reflect a growing congressional recognition that the Superfund site cleanup problem is a societal one and not merely a specific responsibility of the chemical and petroleum companies alone.

Second, these bills also reflect the recognition that the current badly depressed petrochemical industry should not pay increased taxes of the level needed to fund the Superfund site cleanup program for the next 5 years. Senator Bradley and Senator Bentsen would continue the present feedstock taxes at existing levels for an additional 5 years. Unfortunately, however, Senators Mitchell and Chafee in S. 955 would amend the feedstock taxes to raise an additional $100 million, which we oppose.

Third, all the bills recognize the need to develop a waste-end tax to raise a reasonable amount of revenue - $300 million per year. CMA believes that the waste disposal tax that is proposed in the Moynihan-Bentsen bill, S. 14, (which was adopted by Senator Bradley) at the rate of $50 per dry weight ton or equivalent is a workable tax at a reasonable rate which achieves some broadening of the tax base. In contrast, the waste generation tax as proposed in the Mitchell-Chaffee bill shares some of the faults of the Administration's bill. It is a wet weight tax and applies to some treatment facilities. As such, it is environmentally unsound and falls disproportionately on the chemical industry.

Fourth, all emphasize the need to continue Federal general revenue contributions to the Superfund trust fund.

Fifth, all would provide a broad-based tax as a third funding component for the Superfund cleanup program. CMA appreciates the great difficulty in developing an appropriate broad based tax alternative for Superfund. We believe, however, that judged by the criteria we have set forth above, the broad-based tax developed by Senator Bentsen and Senator Wallop in S. 957 is preferable to those provided in S. 596 and S. 955.

The Bentsen-Wallop bill would provide a simple, broad-based transaction tax at low rates. Since the tax applies to all manufacturers, it has the required environmental nexus. Moreover, the proposed tax is relatively trade neutral and free of "cascading" problems. CMA believes that S. 957 represents an excellent foundation for this Committee to develop a broad-based tax for Superfund.

APPENDIX A

CMA
CHEMICAL MANUFACTURERS ASSOCIATION

STATEMENT OF

W. H. CLARK

PRESIDENT

NALCO CHEMICAL COMPANY

ON BEHALF OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON COMMERCE, TRANSPORTATION
AND TOURISM

COMMITTEE ON ENERGY AND COMMERCE

UNITED STATES HOUSE OF REPRESENTATIVES

ON

SUPERFUND REAUTHORIZATION

APRIL 2, 1985

2501 M Street, NW • Washington, DC 20037 • Telephone 202/887-1100 • Telex 89617 (CMA WSH)

The Chemical Manufacturers Association is a non-profit trade association whose member companies represent more than 90 percent of the productive capacity for basic industrial chemicals in this country. In several appearances before Congressional committees since November of 1983, we have stressed both our strong support for an effective national program to clean up problem waste sites, and our commitment to play a cooperative and constructive role in the process leading to reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as Superfund. We are pleased to present our views on Superfund reauthorization.

We believe that Congress should reauthorize Superfund by (1) determining realistically what EPA's annual funding needs will be, and providing for such levels; (2) deriving these funds from more broadly based mechanisms than the tax structure of the current law; (3) providing this funding for a five-year period and re-examining needs at that time; and (4) re-enacting the current law with minor modifications.

We recommend that the Superfund tax be reauthorized at higher levels for the next five years. This higher level of taxation should be consistent with EPA's ability to manage these funds. EPA states that it can effectively spend about $1 billion a year over the next five years to clean up inactive hazardous waste sites. We support this level of funding. A fund of this size will enable rapid cleanup yet provide for efficient management of the program.

I. CMA Proposes a Balanced Mechanism to Finance the Superfund Site Cleanup Program

We believe that an effective waste site cleanup program at a $1 billion a year level can be responsibly financed with a balanced combination of special industry taxes, general revenue contributions, cost recoveries from responsible parties, interest on trust fund accumulations, and standby borrowing authority. In brief, our proposal would extend the current Superfund feedstock taxes at current levels for an additional five years. Moreover, we propose that Congress adopt a new tax on the disposal or long term storage of hazardous wastes at rates equivalent to $50 a dry weight ton. These special taxes on industry would raise over $600 million annually. The balance of anticipated Superfund spending needs would be provided by general revenues, cost recoveries from responsible parties, interest and borrowing.

A. Feedstock Taxes Should be Maintained at Existing Level

As we will discuss below, increased feedstock taxes will have a severe economic impact on the chemical industry. We recognize, however, that it is important to provide a stable base of funding for the CERCLA program for the next five years. CMA has, therefore, endorsed continuation of the feedstock tax, at current levels, for five more years. This would raise approximately $307 million per year.

1. Increased Superfund Taxes Would Have a Detrimental Effect

We strongly object to Superfund tax proposals that would place almost the entire economic impact of cleaning up inactive sites on the chemical and allied industries. For sites or portions of sites without identifiable or solvent responsible parties, the cost must be borne by a much broader segment of society than simply the chemical industry. The many industries and businesses as well as federal, state and local governments involved in Superfund sites demonstrate the vast number of contributors to this nation's hazardous waste site problem.

For example, EPA's National Priorities List (NPL) of serious hazardous waste sites Final Rule, 1983, shows that the industry category of 49 percent of the disposers of hazardous waste at NPL sites is unknown. The study also shows that only 18 percent of the disposing companies are members of the chemical industry. Eleven other industries also are represented. Further, an examination of the NPL list by site owners shows that only about

15 percent are attributable to the chemical industry. Thus there is overwhelming evidence that many segments of industry and government contributed to this problem.

As we pointed out in our testimony in the last Congress, legislative proposals to increase CERCLA funding which rely principally on increasing feedstock taxes above the current rates would cause plant shutdowns, loss of export potential, lost jobs in the chemical industry and erosion of the tax base. CERCLA taxes at the current levels already are narrowly based, inequitable according to both EPA and Treasury Department analysis [1/], and so structured that the taxpaver must today absorb most or all of the tax rather than pass it along into the marketplace. The economic impact of CERCLA feedstock taxes has been to consume a substantial share of pre-tax earnings of the taxed chemical sectors. Increased CERCLA rates, such as those proposed in the House-passed version of H.R. 5540 in the last Congress, would exceed the pre-tax earnings of taxed petrochemicals and consume the majority of pre-tax earnings for inorganic chemicals. Competitive conditions already foreclose investment for new facilities to manufacture taxed chemicals. Loss of earnings would further jeopardize continued operation of existing chemical

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[1/] EPA 301 (a) (1) (G) study on pages ES-4; Testimony of Hon. Mikel M. Rollyson, Tax Legislative Counsel, before Senate Committee on Finance, September, 1984.

manufacturing facilities while threatening jobs and export potential.

Current CERCLA feedstock taxes are imposed by statute on 42 chemical substances and petroleum sold, used, imported or exported by 496 [2/] taxpayers. However, the bulk of the chemical feedstock taxes is paid on eight petrochemical feedstocks (primary petrochemicals) and five inorganic chemicals and by less than 30 chemical manufacturers. Primary petrochemicals account for more than two-thirds of CERCLA taxes and 12 companies pay 70 percent of the taxes on these substances.

Moreover, the tax does not distinguish between hazardous and non-hazardous use of taxed chemicals, nor does it reflect the environmental risks of the taxpayer's waste management practices. Compared with the current CERCLA tax distribution of 70 percent to primary petrochemicals, that 70 percent share would diminish to 31 percent [3/] if distributed in relation to those substances' contribution to waste problems in 691 Superfund sites on the National Priorities List analyzed by EPA in 1984.

CERCLA taxes are not passed through in the marketplace, further exacerbating their inequity and negative economic impact

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[2/] IBID page 2-4.

[3/] IBID page 4-9.

on narrow industry segments. Feedstock taxes were presumed by CERCLA's authors to be equitable because they were thought to be passed along in the manufacturing process to impact on all potentially hazardous substances. From the perspective of 1980 economic conditions that existed when CERCLA was crafted, pass-through might have been possible. For instance, primary petrochemical demand grew during the 1975-79 period at 2.4 times the GNP growth rate and industry was hard pressed to meet demand. Full cost recovery, including costs associated with new taxes were likely in that competitive environment of temporary shortages.

However, demand for petrochemicals from 1979 through 1983 decreased at 2.7 percent per year. This reduced demand, coupled with extensive new capacity installed in the 1979-80 period, led to worldwide overcapacity. Primary petrochemical prices dropped sharply and prices for foreign petrochemicals tended to set prices in foreign and domestic markets. The impact of these foreign prices capped prices for U.S. products and prevented pass-through of CERCLA taxes. That condition still exists today despite improvement of U.S. competitiveness through ongoing elimination of inefficient manufacturing facilities and increased manufacturing innovation. Prices have continued to drop and the Bureau of Labor Statistics indicates that some taxed chemical prices are 20 percent below January 1, 1985 levels predicted in Superfund legislation proposed late in 1984. This limiting effect of foreign prices is more fully explained in the foreign trade discussion later in this testimony.

The economic impact of CERCLA taxes has been to consume a large share of profits on the few chemicals subject to the feedstock tax. Increased feedstock tax rates to accommodate an expanded Superfund may eliminate earnings completely. CERCLA feedstock taxes have been equal to 1.2 to 1.4 percent of primary petrochemical sales value. Increasing the tax rates by 3.43 times, as proposed in EPA's Feedstock Tax Option I in its Section 301 study [4/], would increase taxes to 4 or 5 percent of product sales value on products whose pre-tax earnings as a percent of sales have generally been less than 4 percent of sales. Similarly, the feedstock tax approach of HR 5640, as passed by the House in 1984, would bracket a range of 4 to 6 percent of sales.

Projected taxes of this magnitude eliminate all potential for earnings on primary petrochemicals whose pre-tax earnings have frequently been negative and averaged less than 2.5 percent of sales value from 1981 to 1983 according to Price Waterhouse & Company [5/]. Inorganic chemical earnings do not appear to be as

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[4/] IBID Exhibit 4-1, page 4-2.

[5/] 1985 Price Waterhouse & Co. survey of sales value, pre-tax earnings and production of taxed petrochemicals and inorganic chemicals.

vulnerable as those for primary petrochemicals but their earnings have decreased in three years to less than one-half pre-CERCLA levels. Expanded CERCLA taxes at indicated levels would consume more than 60 percent of potential earnings. The Price Waterhouse study confirms the findings of a 1984 study by DeWitt and Company which indicated that expanded CERCLA taxes would eliminate earnings on taxed petrochemical feedstocks. The DeWitt study further forecasted that those lost earnings would jeopardize continued operations of existing facilities on which 30,000 direct jobs and 120,000 jobs in related industries are dependent. [6]

These economic impacts were confirmed by the Congress' Office of Technology Assessment (OTA) in a statement filed September 10, 1984 with the Senate Committee on Environment and Public Works.

2. Increased Superfund Taxes Would Harm International Competitiveness

The chemical industry in 1984 was the third largest manufacturing industry in the United States in terms of value of shipments. It also is one of the few sectors of the economy which has consistently exhibited a positive trade balance. That

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[6] DeWitt & Company, "Superfund Economic Impact" (July 17, 1984).

trade balance peaked in 1980 and has been declining since that time. Using the Department of Commerce's SIC classification (SIC 28 - Chemicals and Allied Products), the chemical balance of trade has declined from $14 billion in 1980 to $10.3 billion in 1984, which represents a decline of 26 percent. There are segments of the industry, however, which have exhibited an even worse performance in declining trade balances.

During the 1980-84 period, the positive trade balance of the petrochemical industry as defined by the Department of Commerce [7] declined from $8.6 billion to $5.5 billion. Not only is this a drop of nearly 37 percent, but the petrochemical share of the overall chemical trade balance has declined over the period from 62 percent to 53 percent. When the $3.2 billion loss in petrochemical trade is compared with the $3.7 billion loss in trade balance for all chemicals, it becomes obvious that petrochemicals are a segment of the industry which is under severe competitive pressure in the international arena.

This statement has already addressed the erroneous assumption that the costs of a tax on feedstock chemicals could be passed through to the downstream derivatives. This difficulty of cost pass-through becomes even more apparent when chemical products in international trade are examined. The taxed feedstocks themselves have negligible trade. It is their downstream derivatives which enter into commerce.

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[7] SIC 2821, 2822, 2824, 2843, 2865, 2869, 2873, 2895

The case of ethylene is a good example. Ethylene production in 1983 accounted for over 13 percent of all petrochemicals manufactured. Yet the exports of this material were virtually nonexistent, accounting for less than 0.01 percent of all petrochemical exports. Ethylene is exported as its downstream products such as polyethylene resins. Polyethylene resins are included in the Department of Commerce's petrochemical definition previously discussed. Downstream products such as these plastic materials enter international commerce, and are competing against products manufactured in countries where no feedstock tax exists. Accordingly, any attempt to pass through the cost of a feedstock tax would render U.S. downstream products less competitive.

A similar condition exists with regard to imports of chemicals. As in the case of exports, it is not the feedstock chemicals which are moving in international commerce, but their downstream derivatives. U.S. purchasers of these downstream products are free to buy either domestic or imported material. Once again, the U.S. producer of these downstream products is prevented from passing through the cost of the feedstock tax by competition from imported materials manufactured from untaxed feedstocks.

A group of 31 inorganic feedstock chemicals currently are also taxed by CERCLA. The trade picture for these commodities is much the same as it is for the petrochemical sector. The majority of these inorganic chemicals are contained in two SIC codes. [8] Since 1980, the positive chemical trade balance for these two product sectors has declined from $727 million to $583 million, a decline of 31 percent. The trade balance for these products had actually been increasing until 1982 when it reached $825 million. The $322 million decline in trade balance in the last two years represents a decline of 39 percent. The above arguments for difficulty of cost pass-through in international trade apply to these inorganic chemicals as they did for petrochemicals.

B. A New Tax Should be Imposed on Hazardous Waste Disposal and Long Term Storage

To support EPA's required annual spending levels, more than $307 million from the feedstock tax will be needed. To reach another increment equivalent to the feedstock tax, we support a national tax on hazardous waste disposal at the fixed rate of $50 per dry weight ton (or equivalent). Such a tax would, among other things:

- produce revenues of the magnitude the current feedstock tax is designed to produce;
- produce broader distribution of tax liabilities among

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[8] SIC 2812, SIC 2819

industrial categories and a more logical relationship to hazardous waste disposal activities; and

- provide incentives where appropriate by
  1) reducing the amount of waste generated, and
  2) utilizing any technologies to recycle, reuse, neutralize, treat, incinerate or otherwise destroy hazardous waste.

Our proposed combination of feedstock and waste-end taxes still imposes the greater portion of the tax burden of the waste site cleanup program on the chemical industry. However, because so many other industries have contributed to waste disposal in the past, and because of the serious adverse economic impacts of higher taxes on our industry, we believe this proposed combination is as much as the chemical industry can fairly be expected to contribute to Superfund on an annual basis.

1. How to Enact a Workable Waste Disposal Tax

As stated above, CMA supports a national waste disposal tax at a rate equivalent to $50 per dry weight ton to provide $307 million per year. Such a tax will broaden the base of the current funding scheme and will provide valuable additional incentives for the safe handling and disposal of wastes in the future.

We believe there are several basic requirements for a workable and effective waste-end revenue system. First, there must be a clearly defined taxable substance. Second, there must be a definite taxable event. Third, there must be a verifiable record of transactions to provide the audit trail for enforcement and collection.

We note that it is especially important to tax waste disposal on a dry weight equivalency. Using a "wet" weight basis will seriously distort waste management practices.

Assessing the tax on dry weight equivalency would treat all methods of disposal in a neutral manner and would preserve the strong environmental incentive that is created by a tax on waste disposal. If the tax is assessed on the dry weight equivalency of hazardous waste, the tax would be assessed on the actual content of hazardous material disposed or deposited for long-term storage.

Determining dry weight is a common, routine analytical procedure. Dry weight is the weight of a substance after removing the weight of water. One method for doing this is referenced by EPA in 40 CFR Part 136. Moreover, the post-closure liability tax which is now in place under CERCLA is imposed on a dry weight basis. 28 U.S.C. 4681(b). The experience developed by the Internal Revenue Service in collecting the post-closure tax would apply here.

The operator of the disposal or storage site should be designated as the taxpayer. The operator maintains an operating log which contains a description and quantity of each hazardous waste received and the method and date of its treatment, storage or disposal at the facility. This limits the taxpayers to fewer than four thousand site operators rather than more than 100,000 generators.

When CMA first proposed the enactment of a hazardous waste disposal tax, some expressed concern that state experience would substantiate that a tax on hazardous waste disposal was an unreliable source of tax revenue. Since that time, however, there has been substantial proof that a tax on the disposal of hazardous waste does provide a reliable revenue base.

First, a September, 1984 EPA survey of state experience with waste disposal taxes confirms that state waste taxes were at least as effective and efficient in producing anticipated revenue over the survey period as the federal Superfund feedstock taxes.

Second, IRS collection data confirm that taxpayers are presently paying federal postclosure liability taxes based on the annual disposal of about 4 million dry weight tons of hazardous waste. Moreover, these taxes are being paid without significant IRS guidance or enforcement efforts and after several Congressional leaders have proposed retroactive repeal of these taxes. Under these circumstances, the postclosure data can be viewed as substantiation of at least the minimum revenue base of a more expansive tax on the disposal and long term storage of hazardous waste.

Third, the September, 1984 OTA statement before the Senate Committee on Environment and Public Works contains a lengthy discussion of the virtues of a federal waste disposal tax. (See OTA Statement, pages 9-16.) While we do not agree with the higher range of the OTA Statement revenue projections on a waste end tax, we believe that the OTA Statement provides solid support for the reliability and workability of such a tax.

2. Tax Should be on Waste Disposal, Not Waste Generation

CMA has surveyed the chemical industry's ability to pay waste-end taxes and found that taxes in excess of a $50/dry weight ton disposal tax would have a negative impact on taxpayers and cause tax base deterioration.

CMA's proposal is intended to raise $300 million/year. To raise more than this amount by taxing waste generation, including waste water treatment, on a wet basis, would be inequitable and impractical.

The recently proposed Administration bill contains a waste generation tax that EPA believes will raise $600 milllion/year. We strongly disagree and object to that part of their proposal. As we demonstrate below by three company specific examples, each company would pay an exorbitant amount of tax for treating small quantities of hazardous waste in waste water systems.

Because the tax applies to waste generation, those who incur the added costs of treating industrial waste to render the waste non-hazardous before its disposal would pay the same tax as those who dispose of hazardous waste. Thus, those whose wastes do not contribute to the nation's hazardous waste sites would, nonetheless, pay for cleaning up those sites.

The inequity of taxing treatment which renders waste non-hazardous is compounded by the fact that the Administration's tax is imposed on a wet weight basis. Those who responsibly manage their wastes in a highly dilute treatment or disposal process would pay higher tax bills under the Administration's proposal than those who dispose of concentrated hazardous waste. The principal impact and burden of the Administration's generation tax would fall upon waste water treatment.

Following are the results of the three companies which have analyzed the impact of the Administration's waste generation tax on their facilities:

EXAMPLE I

Located in the Midwest, a large manufacturing facility uses waste-water treatment as a principal component of its hazardous waste management program. Its waste-water treatment system is designed to handle an approximate average flow of 20.0 million gallons per day, or 30 million wet tons per year.

Within the manufacturing facility, 68 plants feed into the waste-water system. Due to the nature of products manufactured, RCRA listed hazardous wastes are subsequently generated. Due to the "mixture rule" under RCRA, the entire stream flowing through the system becomes hazardous.

The waste-water system is massive with state-of-the-art technology. The system includes in excess of 15 "qualified hazardous waste management units" as defined under the Administration's proposal, Section 303. Of these units, three are surface impoundments. One of the surface impoundments covers more than 220 acres, or 9.6 million square feet of surface area. This same impoundment has a capacity of 750.0 million gallons.

Under the Administration's proposed tax on hazardous waste, the tax liability for this single waste-water treatment facility would be in excess of $270 million in the first year. The net operating income of this large manufacturing facility for the past three years is considerably less than the first year tax liability. By the end of the third year, the imposed tax liability is greater than the net operating income for the past eight years.

Since this waste-water treatment facility handles listed hazardous wastes, pre-treatment upstream provides no remedy from the onerous tax rate. Replacing the surface impoundments with treatment tanks would require enormous amounts of limited capital. Unfortunately, at this particular site, treatment in tanks is not a viable option due to the large flow volume in the system. Given these conditions, this single facility would raise almost 50 percent of the Administration's projected revenue under this taxing scheme.

EXAMPLE II

Three facilities owned by Company B would owe a total of $107 million under the Administration's proposed waste generation tax.

One facility manufactures ammonia and organic compounds along the Gulf Coast. The facility injects listed hazardous wastes and waste acid into a sandstone formation. Approximately 1.8 million tons are injected annually. Some of the material going to the deepwell is first treated in a large impoundment, and then in a series of tanks. Some of the process waste material goes directly to the deepwell injection operation. This plant would owe approximately $7.6 million under the Administration's waste generation tax scheme.

Another facility which Company B operates in Georgia makes pigment and related products. The waste acid from the process is neutralized in a series of treatment ponds and discharged to the river under a NPDES permit. The Georgia facility would owe approximately $44 million under the Administration's bill.

In West Virginia, Company B makes polymer products and treats listed hazardous wastes in a series of waste water treatment ponds including a neutralization basin, a primary clarifier, an equalization basin and an activated sludge facility before it is discharged to a river under a NPDES permit. The West Virginia facility would owe $52 million under the Administration's waste generation tax.

EXAMPLE III

At its plant in the East, Company C treats liquid wastes generated on and off site in a wastewater treatment plant (WWTP) which uses powdered activated carbon and biological treatment. In 1981 the WWTP influent included approximately 65,000 tons of wastes listed as hazardous under EPA regulations. That year about 55,000 tons of sludge were removed from the WWTP and landfilled on site. The WWTP treated approximately 45.3 million tons of wastewater in 1981, sending the effluent to a surface impoundment, where it mixed with cooling water from the site prior to discharge to a river. Currently, about 50,000 tons/year of sludge are landfilled, and the WWTP treats about 47 million tons/year.

Based on this facility's current practice, the Administration's waste tax proposal would cost a prohibitive $460 million in the first year. This figure reflects 47 million tons of treated wastewater, which is "hazardous" because it is downstream of a mixture including wastes listed as hazardous by EPA, passing through a surface impoundment for further dilution with cooling water prior to discharge to the river. The mixture of waste water treatment plant effluent and cooling water totals 112 million tons/year. Applying the $9.80/ton tax to this quantity would generate approximately $111 million.

We should note that the recently enacted RCRA legislation provides an exemption from certain requirements for biological waste treatment facilities. These facilities, which were installed to meet requirements under the Clean Water Act, must be maintained with highly dilute waste concentrations. Enormous quantities of water are required for proper waste treatment. The Administration's proposal would result in significantly higher tax liability, therefore, for these taxpayers whose specific waste water treatment facilities already represent a significant investment and are regulated by the Clean Water Act.

A major reason for adopting a waste tax is to expand the very narrow base of the Superfund feedstock taxes so as to include additional taxpayers who have contributed to hazardous waste problems. By proposing a tax on waste generation computed on a wet basis, however, the onus of the Superfund taxes would continue to fall unfairly on the chemical industry. The ability of the Administration's proposal to broaden the base of taxpayers who contribute to Superfund site cleanup beyond these industries is relatively small.

3. Proposed Waste Generation Tax Imposes Excessive Tax Liabilities on Industry

The Administration purports to raise $600 million each year from the proposed waste generation tax, an amount that we believe greatly exceeds the practical limits of a workable waste end tax. Our analysis indicates that the Administration's proposal would establish a much greater tax burden. According to our calculations, for Fiscal Year 1986, the tax liability of the chemical industry alone would exceed $1.8 billion under the proposal.

CMA has recently completed its 1983 waste survey of member company respondents. This survey includes responses from 722 member company plants that are believed to constitute 80 percent of the U.S. chemical industry. Applying the Administration's proposed tax rates for Fiscal Year 1986 to the CMA waste survey data, the generation tax would produce over $1.8 billion from the CMA survey respondents alone.

In the following table we present our analysis of the waste data furnished by the CMA waste survey respondents and the estimated tax liability those wastes would incur under the Administration's proposed generation tax:

IMPACT OF ADMINISTRATION BILL ON CMA SURVEY RESPONDENTS

NPDES W.W. IN IMPOUNDMENTS	158 mT
POTW W.W. IN IMPOUNDMENTS	18 mT
TOTAL WASTE WATER	176 mT
UIC WELLS (50% IN IMPOUNDMENTS)	7.0 mT
LANDFILL	0.6 mT
DISPOSAL IMPOUNDMENTS	0.5 mT
OTHER LAND DISPOSAL	0.4 mT
TOTAL LAND TONNAGE	184.5 mT
UIC INJECTION THROUGH TANKS	7.0 mT
INCINERATION	0.4 mT
OTHER TREATMENT	0.2 mT
TOTAL NON-LAND	7.6 mT

[mT = million of tons @ 2000 pounds]

The overwhelming portion of the tax revenue produced under the waste generation tax would be derived from taxing waste water (95 percent). A fundamental difference between CMA and EPA in the estimates of revenue that would be produced under this tax centers on the ability of industry to reduce the volume of waste water streams.

Limitations on the ability to reduce these include the following:

- Major capital expenditures would be required to divert these streams.
- Biological plants are sensitive to hydraulic load and concentration of wastes.
- Diverted storm water would require outfall permits through regular administrative process.

- EPA's proposed codification rule would apparently eliminate pH adjustment ahead of primary impoundments as a means of removing waste water plants from tax liability.
- New listings already being developed by EPA and mandated by Congress will significantly increase the volumes of waste water subject to tax.

C. General Revenues, Interest, Cost Recoveries, and Borrowing Should Constitute Remainder of the Fund

The two types of industry taxes outlined above at the levels we have indicated -- approximately $307 million per year from feedstock and $307 million per year from the disposal tax -- will support EPA's projected annual spending needs. This is because contributions from the general federal revenue share, interest on unexpended fund balances, and cost recoveries secured by EPA from responsible parties after it has spent fund money for cleanups should easily provide the balance.

We believe a substantial general revenue contribution to the fund is appropriate for reasons of equity and sound public policy. The problems associated with inactive hazardous waste sites reflect more than 100 years of industrial development in the nation. Hazardous wastes have been and will continue to be generated by a wide range of industries, business concerns, government agencies and defense installations, municipalities, and scientific facilities. The problem is societal in scope and the mechanisms for coping with it should reflect this fact, just as the benefits of resolving the problems will inure to all elements of the country. As Congress recognized when it enacted Superfund in 1980, only through the use of general revenues, both state and federal, can this societal responsibility be fairly discharged. As recently as last fall, the Treasury Department acknowledged this fundamental principle before the Senate Committee on Finance [9/].

EPA projections indicate that it expects to receive 30 percent of inactive site cleanup costs through cost recoveries. Even if only $700 million per year is spent from the fund for cleanups, there would be an average of $210 million in cost recoveries per year at the 30 percent rate. Thus, our estimate displayed below as to cost recovery and interest is probably conservative.

Since it is likely that peaks and valleys will occur in EPA's spending requirements for site cleanup, and in annual levels (though not in overall amounts) of cost recoveries from responsible parties, we also recommend that the Agency be given the authority to borrow up to $350 million annually to assure level funding throughout the five year reauthorization period. Any amounts borrowed could be amortized over a 10-year period and

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[9/] Testimony Before Senate Committee on Finance of Hon. Mikel M. Rollyson, September, 1984.

then repaid from Superfund cost recoveries from responsible parties.

We note that the Administration proposed providing additional EPA borrowing authority in its bill to reauthorize Superfund. The proper use of borrowing to maintain orderly cash flows for the program would enable EPA to make rapid, effective waste site cleanup while responsibly maintaining tax rates at levels that would not impose severe economic hardship.

The following table shows how our proposed funding mechanism would match EPA spending needs of up to $1 billion per year:

(All figures are stated in millions per year)

$307	feedstock taxes
+ 307	waste disposal tax
176	general federal revenues
$790	total funding
+ $210	cost recoveries and interest
$1000	annual EPA spending

It should be noted that this annual total does not reflect all expenditures that will be devoted to cleanup of NPL sites. EPA estimates that 50 percent of these sites will be cleaned up by responsible parties.

II. Settlement and Enforcement Issues Should be Resolved so as to Accelerate the Pace of Cleanup

Aside from providing adequate and fairly based funding for the Superfund program, we believe Congress should consider means to accelerate cleanup through settlement and private participation. Under current law, the government has several enforcement vehicles to seek cleanup and to recover the costs of its cleanup acitivities. The focus of these enforcement efforts should first be directed at the owner or operator of a site since they are primarily responsible for the creation of the conditions at the site. Rather than enforcement or litigation, however, the goal of expedited cleanup is usually better served by a speedy and responsible settlement process. The factors are complex, but several key components could speed the process and make the whole program more efficient. To achieve these goals, we recommend the following:

- EPA should first identify all major responsible parties at a site and enter into negotiations with those who are willing to settle quickly.
- Next EPA should use the fund to pay for the remaining or absent shares, e.g., those who are either unwilling to settle or are not available for settlement.
- Lastly, EPA should vigorously pursue non-settling parties to recover the costs of the fund in acting on behalf of the recalcitrant parties.

We believe the proposals of the Administrative Conference of the United States offer sound principles for improving the settlement process. According to these proposals, EPA should place greater emphasis on the negotiation of voluntary cleanups at hazardous waste sites. EPA is also encouraged to exercise greater flexibility in situations where cleanup arrangements are being negotiated rather than litigated. This includes use of fund money to pay for absent shares and apportioned liability based on the volume and nature of wastes at a site rather than full joint and several liability for cleanup. The Administrative Conference notes that this would provide an incentive for cooperating parties to join promptly in an agreement, and would free Agency resources to pursue intransigent parties. We believe these recommendations deserve the support of Congress.

We also urge Congress to endorse a "right of contribution" under CERCLA. Under common law, a party is normally entitled to contribution from other liable parties where the party has been sued for more than his fair share of responsibility. Both S. 51 and the Administration bill would create an express right of contribution in CERCLA, which will be useful in ameliorating the harshness and inequity of joint and several liability and will end the debate over whether the Superfund law affords such contribution. These proposals, however, also preclude a party from obtaining contribution until after the litigation is completed, or until a settlement is made. CMA strongly opposes provisions that would prevent the joinder of additional responsible parties prior to completion of the litigation. We believe that while such a proposal imposes an excessive burden on those parties who settle or are subject to judgment, it also inhibits the settlement process and thereby delays cleanup.

A review of pending Superfund litigation shows that the government has not sued all or substantially all responsible parties at a site and has in some cases sued only a fraction of those parties it has identified as having contributed to the site.

Judgments in Superfund cases may be huge, sometimes into the tens of millions of dollars. To require a defendant to pay the entire judgment without contemporaneous contribution would be an extremely unjust burden. It might even force some smaller companies to seek the protection of the bankruptcy laws.

Moreover, bringing additional parties into the litigation through a contribution action has the effect of bringing all such responsible parties and their financial resources to the bargaining table at an early date. In such litigation they may also be subjected to the direction of the court in maintaining progress in settlement negotiations. Means are available to assure that litigation is conducted in an expeditious manner that will not delay the government's cleanup efforts. These include strict judicial control of cases, consideration of the recommendations of the Manual for Complex Litigation and the use of innovative case management orders, such as those already implemented, in some Superfund litigation.

In addition, Congress should expressly ratify the concept that Superfund dollars should be used to cover the shares of non-settling parties and the shares of parties that cannot be identified or are insolvent, so-called "orphan shares". Experience has shown that most responsible parties are willing to pay for their fair share of cleanup costs. A fund commitment to cover non-settling and orphan shares would provide a tremendous incentive for voluntary cleanup. EPA would, of course, pursue the non-settlers' shares through cost recovery.

Congress also should consider providing that where a party has entered into a good-faith settlement to pay its fair portion of a site cleanup, that party should be released against all further government claims for the site under CERCLA. Current uncertainty on this issue is creating great disincentives to settlements, especially for non-negligent off-site generators who in fairness should have no further association with a site once they have paid for a CERCLA cleanup.

Finally, parties that settle want protection against suits by non-settlers. In some Superfund cases, parties have settled with the government only to find themselves sued for contribution by non-settlers. Congress should provide that a good-faith settlement bars any suit for contribution by non-settling parties.

In summary, voluntary settlement will have to achieve a substantial portion of the site cleanups in order to make the continued progress the public expects. Steps to promote voluntary settlements should be encouraged by Congress to quicken the pace of cleanups and to avoid burdensome and costly litigation which will drain both private and governmental resources.

III. Expanding The Scope of Superfund Would Divert Resources From The Cleanup Program

While we have noted our concerns regarding funding and enforcement, we believe that the Superfund law as now written provides a good, workable framework for emergency response actions and the national waste site cleanup program. We are aware of widespread frustrations that the waste site cleanup program has not appeared to be moving fast enough. We are as anxious as anyone to get the hazardous waste problem behind us.

Despite the initial start-up difficulties with the program, we believe that any fair analysis indicates that EPA is now making good progress in its waste site cleanup efforts. The Agency's recent testimony shows its momentum has been building rapidly over the last two years. Because the program is now beginning to produce and EPA is "on track" under the currently drafted law, we think it would be inappropriate to encumber the process with many new significant amendments that institute new uses for fund money, other than for inactive hazardous waste sites, and which will only disrupt the progress EPA is making. We will describe below some of our principal concerns.

By concentrating its efforts on hazardous waste sites, EPA has begun to make significant progress. However, there have been recent signs that this progress might be diverted by a new focus on many more sites with unknown implications for the future of the program.

For example, EPA recently requested comments in its NPL proposal about the advisability of using Superfund resources to clean up six "South Central Oahu" sites in Hawaii. These sites are proposed for listing on the NPL because they may be contaminated by the agricultural use of pesticides. EPA has acknowledged that pesticides are widely used throughout the country, and there may be many other sites similar to the Oahu sites. We submit that EPA should not divert Superfund resources to the treatment of such sites. In fact, the pesticide liability exemption of Section 107(i) is evidence of a Congressional expectation that significant fund resources not be devoted to pesticide contamination.

Similarly, Congress did not intend to use the fund for extensive remedial action at mining sites. The EPA Administrator should have authority to respond if there is an emergency public health threat posed by mining wastes. However, this authority should not be construed as a broad mandate to clean up mining sites.

We also urge that fund resources not be used to perform remedial work on releases of "pollutants or contaminants." Congress gave EPA the authority to respond to releases of hazardous substances and pollutants or contaminants. They did not, however, give EPA authority to recover costs for cleanup of pollutants or contaminants -- only for cleanup of hazardous substances. Because these costs are not recoverable under Section 107 and will therefore diminish the fund, money in the fund should be conserved for serious public health threats and for remedying problems posed by hazardous substances in waste sites.

In addition, we oppose efforts that would increase the fund's share of cleanup activities at municipal landfills. State or local governments should bear the major burden of the cleanup costs for municipal sites. EPA estimates there are 36,000 municipal landfills that may need remediation. It would impose a major drain on the fund unless states are willing to pay their fair share of the remedial costs.

Finally, permanent relocation of citizens residing near hazardous waste sites should be used very judiciously due to its high cost. We recommend that such relocation be considered only where there is a true health emergency related to hazardous waste at a site. We do not support instituting relocation as a routine removal action. Moreover, the concept of relocation should not be expanded to provide aid to businesses affected by a relocation of residents.

We want to emphasize that we are committed to legitimate fund expenditures that lead to fully adequate site cleanup and appropriate emergency response actions. Going beyond these important tasks, however, leads toward an uncharted federal program with numerous goals and almost infinite possibilities of expansion. If we are to achieve the goal of cleaning up problem hazardous waste sites in an expeditious manner, then Superfund resources must be focused on priority hazardous waste sites and true emergency needs.

IV. Compliance with other Environmental Laws Should Retain Flexibility

In choosing the appropriate remedy for Superfund cleanup, several environmental laws may be appropriate to use in developing the solution. We support a process whereby EPA uses a case-by-case analysis in determining whether these environmental standards should be used. To illustrate our point of view, the applicability of RCRA standards will be discussed.

Uniform application of RCRA, without consideration of site specific factors, would be inappropriate at Superfund sites. In some cases application of these standards might even achieve a less environmentally protective solution. RCRA standards are designed to provide a strict set of uniform minimum standards for operating RCRA facilities. Many RCRA standards are technology based rather than health based, requiring the use of specific technologies. In contrast, cleanup standards for Superfund sites must achieve the goal of protecting health and the environment, and therefore require site-by-site flexibility.

Some RCRA standards, however, may be relevant to consideration of the appropriate level of cleanup at a particular site. EPA has recognized this, and under proposed revisions to the NCP, provides for consideration of RCRA standards in Superfund cleanups. Even here, however, one must be cautious in considering, and potentially applying, RCRA standards. For example, RCRA standards require that sites be covered with a cap of low permeability materials at closure. Some Superfund cleanup technologies, however, depend upon introduction of bacteria into the site to break down the organic wastes and render them non-toxic. By installing a cap, bacterial action would be precluded.

Some RCRA groundwater standards suffer from other problems. For example, the basic RCRA groundwater standard (no increase in contamination over background) is not health based; rather, it is based on a zero contamination concept. In addition, RCRA groundwater standards are measured at the edge of the RCRA facility, for example, the edge of the landfill. Requiring control to any particular level at such a boundary might overlook entirely the question of the relevant human or environmental point of contact or use. For instance, a drinking water standard (which could be required under RCRA) expresses concentration levels that people should not drink, and site remedial measures should assure that people not drink substances in these concentrations. It may not make sense, however, to require that the concentration level specified in such a standard be met at the waste site boundary in situations where (1) the concentration would be substantially diluted or entirely dissipated by the time it reached a point where the water could be drawn for drinking or (2) the groundwater, for reasons apart from the waste site proximity, is not going to be used for drinking in any event.

It is important to assure that resources are not wasted on unnecessary construction projects. Rather than requiring mandatory application of standards, remedial actions should be relevant and appropriate at each site in order to protect health and the environment. Where such standards are appropriate and applicable, EPA should be able to make determinations that they will apply.

In fact, under RCRA substantive standards, attainment of "background levels" may often be required. The concept of "background levels" has no logical connection to a level of control that is actually needed at specific sites to protect health and the environment. To require a remedy to achieve background levels may in many cases result in cleanup far beyond what is necessary to protect health and the environment, with no benefit to anyone other than the construction contractor.

V. Compensation Programs Should Not Be Funded Out of Superfund

Providing compensation for persons suffering from chronic diseases in America is a serious subject, and one that deserves careful consideration by Congress. Because of the broad scientific, social, economic and legal issues involved, however, Congress should not treat this matter simply as an "add-on" to the Superfund hazardous waste site cleanup program. In previous testimony we explained why, in light of the current state of scientific evidence and the need to avoid diverting Superfund from waste site cleanup, it would be inappropriate for Congress to legislate programs for "victims' compensation" as part of the Superfund. In passing H.R. 5640 last year, the House wisely rejected any such proposals. The House in fact defeated by a vote of 200-159 an amendment to fund a compensation scheme out of Superfund. [10]

Enactment of a victim's compensation program, as a part of Superfund, would be a serious mistake. It would divert needed resources from the cleanup of hazardous wastes sites. Moreover, it is likely to develop into an uncontrollable entitlements program that would be extremely costly for the entire nation. Once a federal right to compensation is established, history indicates that it is unlikely that Congress would be able to limit compensation to a manageable and reasonable benefits program. [11]

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[10] See Congressional Record of August 10, 1984, at H8892 to H9006.

In considering the compensation issue, we urge Congress to evaluate the scientific data that has been developed by CMA and others. Approximately two years ago CMA and several other organizations contracted with a scientific panel of Universities Associated for Research and Education in Pathology (UAREP). The purpose of the contract was to conduct the first comprehensive study of the health effects on populations in the vicinity of hazardous waste disposal sites. To assure the independence of the scientific panel, the UAREP contract with the sponsoring organizations was managed by Arthur Young and Company.

UAREP has completed its study and released its final report at a press conference on March 14, 1985. The study's principal conclusion is that "there is little scientific evidence that chemical disposal sites have had serious effects on the health of populations living near them." This, of course, does not mean that these sites pose no risks, and UAREP strongly urges prompt remedial action to reduce the potential for health effects. The results of the UAREP study raise fundamental doubts about the need for a major new federal program to compensate persons allegedly injured by waste sites.

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[11] This is amply demonstrated by the history of the Federal Black Lung Act. Under this statute, a compensation program for miners expanded from a predicted overall cost of $200 million to an actual cost of $2 billion a year.

VI. Recommendations Regarding Current Reauthorization Proposals

On March 1, the Senate Environment and Public Works Committee approved S.51, a bill to reauthorize the Superfund program. In addition, the Administration recently offered its Superfund reauthorization proposal. A summary of our views on major features of these proposals is set forth below:

A. FUND SIZE

EPA states that it can effectively spend about $1 billion a year over the next five years to clean up inactive hazardous waste sites. We support this level of funding. A fund of this size will enable rapid cleanup yet provide for efficient management of the program. S.51, however, recommends $7.5 billion in funding over the next five years, a level which we believe is in excess of funding needs.

B. FUND SOURCE

The Administration bill recognizes that current CERCLA feedstock taxes should not be increased. It would continue these taxes at the current rate of approximately $300 million a year. We strongly support maintaining feedstock taxes at current levels, as any increase would have adverse economic consequences for the chemical industry.

The Administration's proposed waste generation tax, however, is seriously flawed. Although we have urged adoption of a tax on hazardous waste disposal for years, the Administration's proposal would tax the generation of hazardous waste calculated on a wet weight basis. This would place the tax unfairly on the chemical industry. Moreover, using currently proposed rates would impose a tax burden of over $1.8 billion a year on the chemical industry, far in excess of the EPA's $600 million a year target.

The Senate bill does not address funding source, leaving the matter to the Senate Finance Committee.

C. SCOPE OF CLEANUP PROGRAM

The Administration bill focuses on the cleanup of inactive hazardous waste sites. We believe it is essential to maintain that focus if the cleanup is to continue at a rapid pace.

Therefore we strongly support the Administration's position that Superfund generally should not be used for such purposes as: mining activities covered by the Surface Mining Reclamation Act; releases due to the lawful application of pesticides registered under the Federal Insecticide, Fungicide and Rodenticide Act, releases from residential, business or community structures not due to hazardous waste sites; public or private water well contamination not due to hazardous waste sites; releases due to naturally occurring substances in their unaltered form; releases covered by and in compliance with permitted discharges and emissions; releases of pollutants and contaminants and natural resource damages.

S.51 also would focus Superfund more on the cleanup of inactive hazardous waste sites. In particular, it prevents the use of Superfund money to respond to a release of a naturally occurring substance, a release from products which are part of a building structure or a release into a drinking water system due to deterioration of the system through ordinary use. While these are worthwhile steps, we believe the more comprehensive approach adopted by the Administration is preferable.

D. COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS

The Administration's bill properly recognizes the need for site-by-site flexibility in selecting an appropriate remedy. Because of the diverse conditions found at Superfund sites, strict application of standards without adjustment for actual site conditions may require excessive expenditures without providing greater protection of the health and environment.

S.51 also adopts this flexible approach. While assuring a degree of cleanup which at a minimum protects health and the environment, the Senate bill provides that remedial actions must be relevant and appropriate under the circumstances at each site.

E. COMPENSATION ISSUES

We agree with the Administration that Superfund should not be used to fund an administrative compensation program. Compensation programs should not be in competition for Superfund waste site cleanup money. S.51 allocates up to $30 million a year from Superfund for grants for as many as ten pilot victim assistance programs for populations at substantially increased risk due to releases of hazardous substances. The programs will include medical screening, health insurance and certain medical expenses. While CMA can support the medical screening aspects, we have concerns and many questions regarding the provision of health insurance and the payment of medical expenses.

Both bills recognize the inappropriateness of including a federal cause of action for persons alleging injury from exposure to hazardous substances. This issue is better left to existing state law and should not be included in a program to clean up hazardous waste sites.

F. ENFORCEMENT AND SETTLEMENT ISSUES

Voluntary settlements play an important role in the cleanup program and should be encouraged in order to quicken the pace of cleanup. Both bills would improve the settlement process by protecting parties that settle against suits by non-settlers. Another useful provision in both bills is the explicit recognition of a "right of contribution". We support a right of contribution. As drafted, however, this right is seriously dminished by withholding its exercise until after judgment or settlement. While imposing an excessive burden on those parties who settle or are subject to a judgment, it would also have a negative impact on the likelihood of settlement.

G. PRE-ENFORCEMENT REVIEW

Both bills would limit judicial review rights in a highly unfair manner. Persons subject to an administrative cleanup order could not seek judicial review of that order until EPA tried to enforce that order in court. This would expose a party subject to such an order to the risk of treble damages and substantial daily penalties.

Where any party faces an order requiring massive efforts and expenditures which might take months to complete, that party should not be cut off by statute from the option of a least attempting to convince a court to review the propriety of the order. The fact that the propriety can be reviewed once EPA brings an enforcement suit is wholly insufficient to protect against abuse. Of course, the judicial review process should not be abused so as to delay the waste site cleanup program. The courts are fully equipped, however, to assure that such abuses will not occur.

H. FEDERAL LIEN

Included in each bill is a provision that the government may impose a lien on all real property owned by a person liable to the government for response costs under Section 107 of CERCLA. This is troubling and is potentially subject to great abuse. We believe this section should not be included in Superfund or at a minimum should be sharply curtailed so as to apply only in certain limited circumstances. In this regard, we propose its use be restricted to the owner or operator of the facility and applied only when there are no other visible assets. Moreover, it should be used only after judgment against the owner or operator, not when response costs are incurred.

I. NATURAL RESOURCE DAMAGES

The Administration bill would eliminate use of the fund to pay for damages to natural resources. However, the ability of federal and state governments to recover such damages from responsible parties under Section 107 of CERCLA would be maintained. This approach was taken by the House of Representatives in 1984 when it adopted H.R. 5640.

We support eliminating use of the fund to pay any natural resource damage claims. Such claims could potentially divert a great amount of financial resources away from site cleanup. As the Committee report explained, Superfund revenues used to pay these claims are diverted from the cleanup of the nation's worst abandoned hazardous waste sites, which is the primary objective of the Superfund program.

While we support the Administration bill's prohibition on the payment of natural resources damage claims out of the fund, we note that S.51 embraces this concept by providing that no Superfund money may be used for these claims if the President determines that the money in the fund is needed for cleanup activities. We do not believe S.51 goes far enough toward focusing Superfund on the important work of site cleanup.

J. STATE COST SHARE

The Administration bill would increase the state cost share for remedial actions at privately owned facilities. Rather than the current 10 percent, states would be required to pay 20 percent of the costs for remedial actions. S.51, however, leaves the state share at the current 10 percent level.

We believe that state cost share for private facilities should be at least 10 percent and that Congress should carefully consider the Administration's recommendation to raise this figure to 20 percent. State participation is an essential element in any well-balanced and workable Superfund cleanup program. Use of federal and state revenues helps assure fiscal and operational accountability and responsiblity. Without such participation, there would be a clear tendency to overspend, wasting resources, since someone else's money rather than public revenue would be involved.

K. PUBLICLY OWNED OR OPERATED FACILITIES

CERCLA established certain requirements that a state must satisfy before it is eligible to receive Superfund money for remedial action at a hazardous waste site. One such requirement is that in the case of a site owned by a state or a political subdivision, the state must pay at least 50 percent of the cleanup costs. The Administration proposes in Section 107 to raise this percentge to at least 75 percent for sites operated directly or indirectly by the state or political subdivision. The Senate bill, while changing the requirement to sites operated by the state or municipality, does not alter the 50 percent requirement.

We believe that the Administration's recommendation should be given serious consideration. Where a state or political subdivision is involved in the operation of the site, whether directly or indirectly, fairness dictates that it should shoulder the major share of any necessary cleanup costs. Similarly, we strongly oppose provisions such as in last year's H.R. 5640 which would have limited that 50 percent requirement to sites which are both owned and operated by a state. A state or political subdivision should be held accountable for waste management decisions they have made or allowed to be made where the site is owned, but not operated by the governmental unit.

L. SITING OF HAZARDOUS WASTE FACILITIES

A critical issue facing the nation is the availability of hazardous waste facilities. In order to properly dispose of the hazardous waste that is generated in our society and to avoid "midnight dumping," it is essential that states have adequate waste disposal capabilities.

The Administration bill and the Senate bill would create an economic incentive for states to expand existing facilities or create new long-term in-state capacity to manage hazardous wastes. This would be accomplished by prohibiting the use of fund money for response actions in those states that do not assure the availaiblity of hazardous waste disposal capacity sufficient to handle that state's needs. Despite this restriction, EPA could still finance a response action where a major public health or environmental emergency exists.

VII. Bradley Bill: S. 596

The bill introduced by Senator Bill Bradley (D. N.J.) is similar to S. 51, the bill approved by the Senate Environment and Public Works Committee. Both bills recommend funding levels in excess of what EPA says it needs. The major area addressed in the Bradley bill that is not addressed in S. 51 is the funding mechanism. The Bradley bill proposes funding from four sources: 1) feedstock taxes at the current level of approximately $300 million per year; 2) a new waste disposal tax to raise an additional $300 million per year; 3) continuation of the $44 million per year general revenue contribution; and 4) a new net receipts tax to raise approximately $850 million per year.

We commend Senator Bradley for recognizing that existing feedstock taxes should be maintained at current levels. As we have previously stated, any increase in these taxes would have a serious negative impact on the chemical industry. We also support the proposed waste disposal tax set out in the Bradley bill. We believe that this tax appropriately focuses on waste disposal rather than waste generation and is structured to raise $300 million in a fair and balanced way.

The bill recognizes the importance of maintaining the appropriation of general revenues. The $44 million sum, however, is not an adequate contribution to the fund as it fails to take into account the broad societal nature of this problem. We believe that the net receipts tax also merits further consideration. Overall, we support the concept inherent in Senator Bradley's bill that the cost of cleaning up hazardous waste sites should be borne by a broader segment of industry.

EXHIBIT I

FLOW CHART - PETROCHEMICAL SOURCES TO END-USE APPLICATIONS

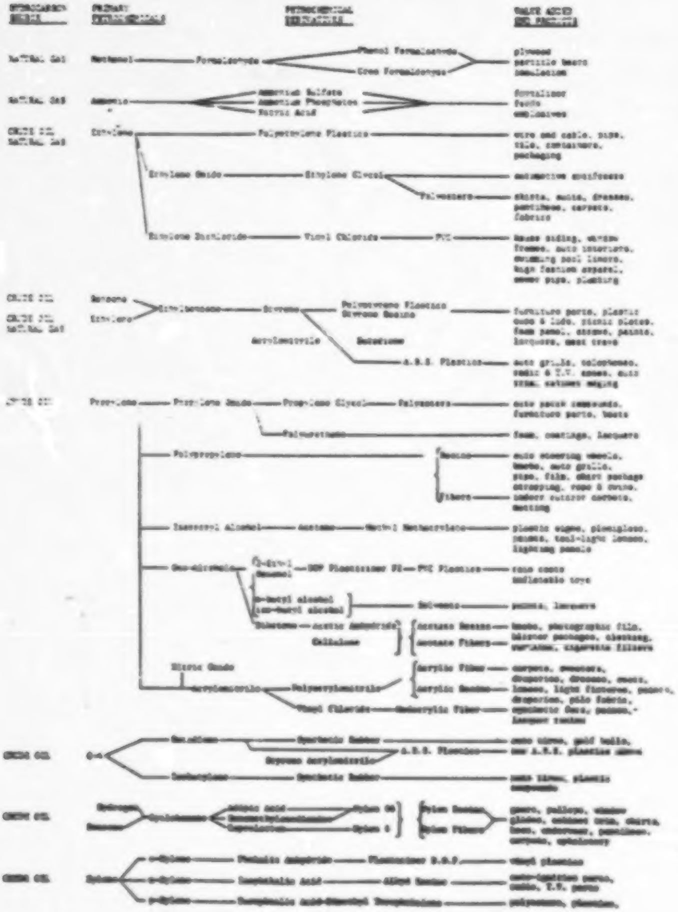

HYDROCARBON SOURCE
PRIMARY PETROCHEMICALS
PETROCHEMICAL DERIVATIVES
VALUE ADDED END PRODUCTS
NATURAL GAS
Methanol
Formaldehyde
Phenol Formaldehyde
Urea Formaldehyde
plywood
particle board
insulation
NATURAL GAS
Ammonia
Ammonium Sulfate
Ammonium Phosphates
Nitric Acid
fertilizer
feeds
explosives
CRUDE OIL
NATURAL GAS
Ethylene
Polyethylene Plastics
wire and cable, pipe, tile, containers, packaging
Ethylene Oxide
Ethylene Glycol
automotive antifreeze
Polyesters
shirts, suits, dresses, pantihose, carpets, fabrics
Ethylene Dichloride
Vinyl Chloride
PVC
house siding, window frames, auto interiors, swimming pool liners, high fashion apparel, sewer pipe, plumbing
CRUDE OIL
Benzene
CRUDE OIL
NATURAL GAS
Ethylene
Ethylbenzene
Styrene
Polystyrene Plastics
Styrene Resins
furniture parts, plastic cups & lids, picnic plates, foam panels, atomes, paints, lacquers, meat trays
Acrylonitrile
Butadiene
A.B.S. Plastics
auto grills, telephones, radio & T.V. cases, auto trim, luggage
CRUDE OIL
Propylene
Propylene Oxide
Propylene Glycol
Polyesters
auto patch compounds, furniture parts, boats
Polyurethane
foam, coatings, lacquers
Polypropylene
Resins
auto steering wheels, knobs, auto grills, pipe, film, shirt package strapping, rope & twine,
Fibers
indoor outdoor carpets, netting
Isopropyl Alcohol
Acetone
Methyl Methacrylate
plastic signs, plexiglass, paints, tail-light lenses, lighting panels
Oxo-alcohols
2-ethyl hexanol
DOP Plasticizer PE
PVC Plastics
rain coats
inflatable toys
n-butyl alcohol
iso-butyl alcohol
Solvents
paints, lacquers
Acetone
Acetic Anhydride
Cellulose
Acetate Resins
Acetate Fibers
knobs, photographic film, blister packages, clothing, curtains, cigarette filters
Nitric Oxide
Acrylonitrile
Polyacrylonitrile
Acrylic Fiber
Acrylic Resins
carpets, sweaters, draperies, dresses, coats, lenses, light fixtures, panels, draperies, pile fabric,
Vinyl Chloride
Modacrylic Fiber
synthetic furs, paints, lacquer resins
CRUDE OIL
C-4
Butadiene
Synthetic Rubber
auto tires, golf balls,
A.B.S. Plastics
see A.B.S. plastics above
Styrene acrylonitrile
Isobutylene
Synthetic Rubber
auto tires, plastic compounds
CRUDE OIL
Hydrogen
Benzene
Cyclohexane
Adipic Acid
Hexamethylenediamine
Caprolactam
Nylon 66
Nylon 6
Nylon Resins
Nylon Fibers
gears, pulleys, window glides, cabinet trim, shirts, hose, underwear, pantihose, carpets, upholstery
CRUDE OIL
Xylene
o-Xylene
Phthalic Anhydride
Plasticizer D.O.P.
vinyl plastics
m-Xylene
Isophthalic Acid
Alkyd Resins
auto-ignition parts, radio, T.V. parts
p-Xylene
Terephthalic Acid-Dimethyl Terephthalate
polyesters, plastics,

EXHIBIT 2

A Comparison of Earnings to Sales Ratios of Chemical Companies for Their Overall Chemical Sales and Sales of Products Subject to CERCLA Taxes

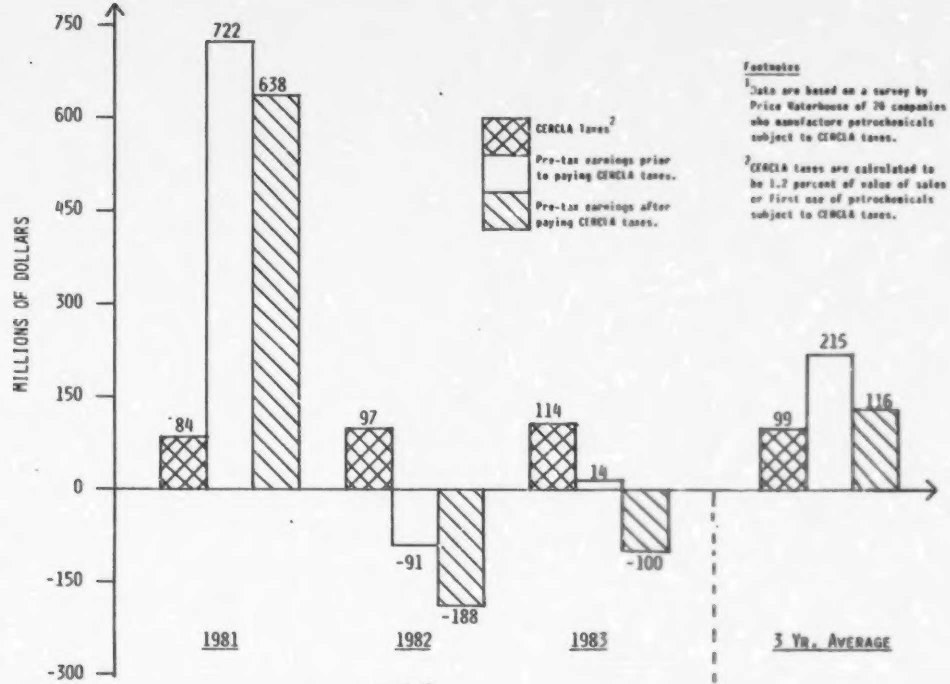
	1981		1982		1983	
	Pre-tax Earnings (mil $)	Chemical Sales (mil $)	Pre-tax Earnings (mil $)	Chemical Sales (mil $)	Pre-tax Earnings (mil $)	Chemical Sales (mil $)
Overall Chemical Sales[1] (Chemical & Engineering News)	6038	82365	2386	72138	4418	73725
Earnings to sales ratio (%)	7.33		3.30		5.99	
Petrochemical sales subject[2] to CERCLA taxes	722	8649	-91	8011	14	9194
Earnings to sales ratio (%)	8.35		-1.14		0.15	
Inorganic chemical sales subject[2] to CERCLA taxes	415	3094	227	3297	220	3214
Earnings to sales ratio (%)	13.42		6.89		6.85	

NOTE: [1] Overall chemical sales are total chemical sales for the 26 companies who responded to a CMA survey conducted by Price Waterhouse & Company as reported by Chemical & Engineering News, June 11, 1984. The companies were selected because of their large volume of production of products subject to CERCLA tax.

[2] Sales and earnings data are totals of the 26 companies responding to the CMA survey.

EXHIBIT 3

THE EFFECT ON PRE-TAX EARNINGS ON PETROCHEMICAL FEEDSTOCKS SUBJECT TO CERCLA TAXES[1]



Footnotes

[1] Data are based on a survey by Price Waterhouse of 20 companies who manufacture petrochemicals subject to CERCLA taxes.

[2] CERCLA taxes are calculated to be 1.2 percent of value of sales or first use of petrochemicals subject to CERCLA taxes.

STATEMENT OF JAN S. ANTHONY, PRESIDENT, RSA CORP., ON BEHALF OF SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC., WASHINGTON, DC

The **Chairman**. Mr. Anthony.

Mr. **Anthony**. Mr. Chairman, and members of the committee, I am Jan S. Anthony. I represent SOCMA, a small trade organization of about 100 members. But more particularly, I am the president of a small company that employs about 14 people and we have about $2 million annual sales. It's a family concern that was started by my father, and I have been operating it since his retirement.

The impact of Superfund even reaches down to the level of small business. For example, last year 11 percent of our raw materials were directly taxed, and the balance were all indirectly taxed in that they were produced from Superfund feedstocks.

I'd like to point out that in the 50 years of our operation we have operated in compliance with all the laws, and we have never been implicated along with a Superfund site. I don't have any reason to believe that we will ever be implicated.

I think the important point there is that to make people realize that small businesses do have a stake in implementing the Superfund law. And we at SOCMA support reauthorization of the Superfund.

The stake that we have really comes from the fact that the communities that we work in are people that we deal with on a face-to-face basis. They have apprehensions about chemical companies, and we deal with them on a grass roots personal level.

This concern that we have to show is on a personal basis rather than a long distance, arm's length administrative basis.

In addition, besides the roughly 100 members in SOCMA, we point out the views of thousands of companies who use chemicals on a small scale and probably contribute to some of the waste problems that we have had. And it's for these reasons that we want to emphasize that we are interested in seeing that Superfund is not only reauthorized, but reauthorized in a way that will not have an adverse economic impact on the smaller firms.

The two key issues that have been pointed out really is the size of the fund and the mechanisms to finance the program. Basically speaking, we at SOCMA and other small businesses, agree with the EPA's estimate of implementing a fund of roughly $5.5 million over 5 years. We would not be adverse to something slightly larger, say up to $7.5 million. But we think that with that kind of a conservative approach it would not be damaging to small business, yet it could really accomplish the priorities that we have as a nation to clean up our past mistakes.

Just to address briefly the effect of the increased funding on a small business. Last year, our company's after-tax contribution to Superfund was about 2 percent with a projected fivefold increase in revenue, say, from the 1.6 up to, say, 5½ to 7 million. That will be around 5 to 10 percent of our after-tax profits. That doesn't seem like a lot, especially with our company which is a technology-oriented company and not a materials based company. We are a high value-added company.

Many of the other small firms that are members of our organization are highly tied into their raw materials cost and have a minimal value added. So a 5 or 10 percent increase in their Superfund contribution may put a very big dent in their profitability.

Basically speaking, we at SOCMA support the Bradley proposal for funding. That is, the four-fold approach that includes the feedstock tax. But I would like to emphasize that we agree with the present level of funding on the feedstock tax. Second, the tax on net receipts above $50 million. Third, the waste-end tax. And, fourth, a contribution from general revenues for the reasons that were pointed out earlier.

In conclusion, what I would like to point out is that small businesses do have this stake in getting this job done. We are committed to the cleanup. We would like to have this accomplished without putting small businesses out of business. And it's a job that we feel, because of our ability at innovation and efficiency of operation because the smallest can be greatly tapped in solving this problem. And, last, I would like to emphasize that we are willing to work together. Any members of your staff or of the committee, we would be happy to work with you as a representative of small business.

Thank you.

The CHAIRMAN. Thank you very much.

[The prepared statement of Mr. Anthony follows:]

Position Statement of

JAN S. ANTHONY
President, R.S.A. Corporation
Ardsley, New York

on behalf of the
Synthetic Organic Chemical Manufacturers Association
(SOCMA)

April 26, 1985

The reauthorization of Superfund raises serious issues of potential economic burden on smaller firms as a result of the funding issues being considered by Congress. The key issues which presently concern smaller chemical firms are the scope of the fund, the size of the fund, and the mechanisms used to finance the program.

The Agency's primary responsibility, as mandated by the Superfund program, is to provide emergency response and remedial action for immediate and long-term threats posed to human health or the environment from abandoned or inactive hazardous waste sites. We believe that this should remain the primary goal of the Superfund program because expansion of the program to cover incidents not related to hazardous waste sites will only dilute the limited resources available to the Agency, and increase the potential economic burden on small firms.

Second, the size of the fund is important to small business because taxes on segments of the chemical industry have been, and will likely continue to be, the largest source of money for the fund. There is a limit, we believe, to the amount the chemical industry can actually absorb. Small companies are adversely impacted by the downstream effects of the taxes imposed on feedstocks used to make the specialty products which are the principal markets of small manufacturers. We believe that the funding provided by Congress, therefore, should be an amount which the Agency can effectively manage and, hence, oppose any unnecessary efforts to generate funds which cannot be wisely spent.

Further, liability for clean-up for smaller firms should be apportioned among the responsible parties according to their relative contribution to a site. This would benefit small business by discouraging the misuse of the current standards which can force a firm to pay clean-up costs far out of proportion to its contribution.

Third, we favor broader-based financing mechanisms in addition to the current emphasis on taxing chemicals and petroleum feedstocks. We support, in principle, the funding proposals set forth in Senator Bradley's Superfund proposal for 1985. The Bradley bill would finance Superfund from four sources: the current feedstock tax, general revenues, a waste-end tax, and a tax on corporate net receipts in excess of $50 million. A broader based funding mechanism will reduce the amounts needed from each source, and alleviate some of the potential economic burden on smaller firms.

Finally, we believe that any legislative proposals which address Superfund should be trade-neutral in effect. We urge that Superfund not make imports artificially cheaper than American products since the potential to impose hardship on industry, especially in the case of smaller firms already experiencing price competition from imports because of the strong dollar, would be great.

In sum, small chemical firms can be economically crippled if Superfund is reauthorized without careful deliberation about the impact on small business. We urge that careful consideration be given to small business, and especially to the points we have raised above.

SOCMA is a non-profit trade association with approximately 100 member companies which manufacture organic chemicals in the United States. Over half of these companies are considered small companies, with annual chemical sales under $50 million. They produce a wide variety of synthetic organic products which are essential to virtually every other American industry, and are responsible for much of the innovation in the industry today.

STATEMENT OF MR. JOHN PAUL, DIRECTOR, GOVERNMENT AFFAIRS, AMAX, INC., ON BEHALF OF THE AMERICAN MINING CONGRESS, WASHINGTON, DC

The CHAIRMAN. Mr. Paul.

Mr. PAUL. Thank you, Mr. Chairman.

My name is John Paul. I'm Director of Governmental Affairs for AMAX, Inc., which is a diversified mining and energy company with operations here in the United States and throughout the world.

I'm testifying today on behalf of the American Mining Congress.

AMC is pleased to offer testimony on the reauthorization of Superfund. We want to assure the members of this committee that the mining industry can and does recognize the realities and the pressures that argue for CERCLA reauthorization. The pressures are compounded by an apparent inadequacy of current CERCLA funding mechanisms to supply moneys needed for all the sites now on the NPL, as well as future sites.

While supporting CERCLA reauthorization, however, AMC must emphasize the significant difference between chemical waste dumps on the one hand and mining processing waste on the other. Those differences, including waste volumes, stabilities and toxicities, must be considered if CERCLA is to be reauthorized in a manner that treats the domestic mining industry equitably. A reasonable approach is needed not only in funding Superfund, but also in its provisions covering liability, clean-up requirements and other critical issues. Our written statement addresses many of those issue: in some detail.

This morning I would like to address a few specific issues. First, the mining and mineral processing industry already contributes to Superfund in amounts that are reasonably related to the proportion of mining sites on the NPL. The industry should not bear a disproportionate share of the total Superfund tax burden. There have been expressions of concern in the past that the mining industry has not paid its fair share of Superfund taxes. Some parties have even been under the mistaken impression that the mining industry pays no taxes.

The fact is, the mining industry has since April 1, 1981 paid Superfund taxes. Our industry's contributions by our own unofficial calculation appear proportional to the number of mining related sites that are on the NPL. And that's about 4 percent.

There are good reasons, I believe, that the industry's contribution to alleged Superfund problems has been significantly exaggerated by the bias against mining related sites inherent in the EPA's hazard ranking system, which is known as the "Mitre Model." And I would encourage you to look at our written statement on that issue where we address the issue in detail.

It also has been argued that metals should bear a greater share of the CERCLA taxes because metals have been detected in a large number of NPL sites. This argument, too, is fallacious. Metals are naturally occurring elements of the earth's crust. They are present also in industrial waste unrelated to the mining industry. This is not to suggest that all appearances of metals and metal-bearing wastes at CERCLA sites are unrelated to our industry's operations. We do suggest, however, that the large number of sites at which metals or their compounds have been found is not a fair measure of the industry's responsibility.

Second, to the extent funds come from industrial sources, a broad based tax, preferably a manufacturer's excise tax, should be applied. As pressures increase to expand the level of Superfund tax revenues, it becomes apparent that the current feedstock tax system will be inadequate. An expanded feedstock tax system, however, in our opinion, would certainly be inequitable.

A broader based tax is essential for the additional funding of CERCLA. Several initiatives have been put forward by organizations in the private sector. One of those would have corporations pay on a minimal rate based upon the corporations' receipts. We've had surtax proposals put forward. And, of course, a manufacturers' excise tax.

After reviewing the above broad-based tax alternatives, AMC wishes to express its general, although not exclusive, preference for the concept of a manufacturers' environmental excise tax. We understand that such a concept is also advocated by the Chemical Manufacturers Association and the American Petroleum Institute, though I recognize there are differences between us as to how much revenue should be raised by the tax.

Let's be clear about one result of such a tax. The mining industry's total contribution to CERCLA would increase from the present level. No one welcomes additional taxes, particularly an industry still struggling to recover from the recent devastating recession and the continuing onslaught of imported minerals.

However, we recognize that CERCLA does require increased funding. We would only urge you to consider that the criteria for a CERCLA tax should be as follows, and include: One, certainty and adequacy of a revenue base; two, equal treatment of imported and domestic products; three, consideration of competitiveness of U.S. exports; and, fourth, ease of administration.

The excise tax concept does meet these criteria. In addition, the excise tax recognizes that the problem of hazardous waste is a broad, societal problem, not one confined to a few specific industries.

Mr. Chairman, I have several additional comments, but I see my time is almost gone. Let me conclude by saying in summary that our position is that we support a broad-based, excise tax to raise private sector revenues. We oppose the imposition of a waste-end tax and believe that any revenues from a waste-end tax could be generated more equitably and more easily by a broad-based tax. Finally, we believe that a single CERCLA tax, such as an excise tax, is more consistent with the concept of tax simplification than applying two or three different taxes.

Thank you for the opportunity to appear here today.

The **Chairman**. Thank you.

[The prepared written statement of Mr. Paul follows:]

Written Statement of

JOHN PAUL
Director of Governmental Affairs
AMAX Inc.

on behalf of the

AMERICAN MINING CONGRESS

before the

UNITED STATES SENATE

COMMITTEE ON FINANCE

Hearing on

REAUTHORIZATION OF THE

COMPREHENSIVE ENVIRONMENTAL RESPONSE,

COMPENSATION AND LIABILITY ACT OF 1980

April 25-26, 1985

Washington, D.C.

Good morning. My name is John Paul. I am Director of Governmental Affairs for AMAX Inc., a diversified mining and energy company with operations throughout the United States and abroad. I am testifying today for the American Mining Congress (AMC).

AMC is pleased to offer testimony on the reauthorization of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA or Superfund).

AMC is an industry association that includes (1) producers of most of America's metals, coal, and industrial and agricultural minerals; (2) manufacturers of mining and mineral processing machinery, equipment and supplies, and (3) financial institutions and engineering and consulting firms that serve the mining industry. AMC appreciates the opportunity to share with the committee some of our industry's concerns regarding the reauthorization of Superfund.

The mining industry will continue to work with Congress and the Administration to develop an effective means of addressing problems that have arisen out of past mining activity.

We also want to assure the members of this committee that the mining industry can and does recognize the realities and the pressures that argue for CERCLA reauthorization. It would appear that many more sites will eventually be listed on the National Priorities List (NPL), and that other sites will require emergency cleanup or removal actions. The pressures are compounded by an apparent inadequacy of the current CERCLA funding mechanism to supply monies needed for all sites now on the NPL as well as future site requirements.

AMC supported Superfund legislation in 1980. Our industry has continued to support that law and its reasonable reauthorization, as evidenced by AMC testimony and statements before this committee, the Senate Committee on Environment and Public Works and the House Subcommittee on Commerce, Transportation and Tourism.

While supporting CERCLA reauthorization, however, AMC must emphasize the significant differences between chemical waste dumps on the one hand and mining and mineral processing waste on the other. Those differences, including waste volumes, stabilities and toxicities, must be considered if CERCLA is to be reauthorized in a manner that treats the domestic minerals industry equitably. A reasonable approach is needed, not only in funding Superfund but also in its provisions covering liability, cleanup requirements and other critical issues.

The specific points we wish to address are these:

1. The mining and mineral processing industry, already contributing to Superfund in amounts that are reasonably related to the proportion of mining sites on the NPL, should not bear a disproportionate share of the total Superfund tax burden.

There have been expressions of concern in the past that the mining industry has not paid its "fair share" of Superfund taxes. Some parties have even been under the mistaken impression that the mining industry has paid no taxes. The fact is that the mining industry has, since April 1, 1981, paid Superfund taxes. Our industry's contributions, by our own unofficial calculations, appear proportional to the number of mining-related sites on the NPL--about four percent. Some 1984 proposals, notably H.R. 5640, would have raised the industry's tax burden to approximately one billion dollars over a five-year term, or 10 percent of a $10.2 billion Superfund (see Appendix I).

There are good reasons to believe that the industry's contribution to alleged Superfund "problems" has been significantly exaggerated by the bias against mining-related sites inherent in EPA's Hazard Ranking System (also known as the "Mitre Model").

It has also been argued that metals should bear a greater share of CERCLA taxes because metals have been detected in a large number of NPL sites. This argument, too, is fallacious. Metals are naturally occurring elements of the earth's crust. They are present also in many industrial wastes unrelated to the mining industry. This is not to suggest that all appearances of metals and metal-bearing wastes at CERCLA sites are unrelated to our industry's operations; we do suggest, however, that the large number of sites at which metals or their compounds have been found is not a fair measure of this industry's responsibility.

2. To the extent funds come from industrial sources, a broad-based tax--preferably a manufacturing excise tax--should be applied.

As pressures increase to expand the level of Superfund tax revenues, it becomes apparent that the current feedstock tax system will be inadequate. An expanded feedstock tax, however, would certainly be inequitable.

A broader tax base is essential for adequate funding of CERCLA.

Several initiatives have been put forward by organizations in the private sector. One such initiative would have corporations pay a CERCLA tax of minimal rates based upon the corporation's receipts, as declared on corporate income tax returns. A second initiative would fund CERCLA via a surtax on a corporation's federal income tax. A manufacturers environmental excise tax also has been suggested.

After reviewing the above broad-based tax alternatives, AMC wishes to express its general, although not exclusive, preference for the concept of a manufacturers environmental excise tax (MEET). We understand that such a concept is also advocated by the Chemical Manufacturers Association and the American Petroleum Institute.

Let us be clear about one result of such a tax: The mining industry's total contributions to CERCLA would increase from their present level. No one welcomes additional taxes, particularly in an industry still struggling to recover from the recent devastating recession and the continuing onslaught of imported minerals.

We have recognized, however, that CERCLA does require increased funding. The criteria for a CERCLA tax should include:

- adequacy of revenue
- equal treatment of imported and domestic products
- consideration of competitiveness of U.S. exports
- ease of administration

The excise tax concept meets these criteria and, in addition, recognizes that the problem of hazardous wastes is a broad, societal problem, not one confined to a few specific industries.

We believe that the excise tax concept can supply the necessary funds while spreading the burden equitably among all who produce, import and sell products in the United States. A relatively modest rate of less than 0.1 percent could raise approximately $1 billion annually. Because the MEET will capture imported products derived from basic feedstocks, the market distortion and competitive inequities of a tax on specific feedstock materials can be avoided. U.S. exporters could still compete for foreign markets because the tax could be rebated on exports.

AMC also believes that any revenues that might be anticipated from a waste-end tax can more easily and equitably be raised by a broad-based tax such as the MEET. Manufactuers already have in place a sales and purchase billing system that could be used to compute the amount of tax due the government. The Treasury Department, through the Internal Revenue Service (IRS), already audits existing excise taxes and thus a MEET should pose no new conceptual difficulties for the IRS.

3. The American Mining Congress supports a broad-based tax mechanism, preferably the MEET, in lieu of other Superfund tax mechanisms, and particularly opposes the imposition of any waste-end taxes.

The waste-end tax concept is particularly inappropriate for high-volume, low-toxicity wastes such as those of our industry. Moreover, we believe that the waste-end tax as a general concept is an inappropriate and counterproductive approach to funding CERCLA.

We understand that some advocates of a waste-end tax see that tax as an incentive for waste generators to reduce the volumes of waste on which they would be taxed. While this is a theoretically attractive concept, it can have very counterproductive ramifications.

Only American industry would bear the burden of waste-end taxes, since only waste generated and disposed of in this country would be subject to the tax. The waste-end tax therefore clearly discriminates in favor of foreign producers and imported products.

Projections of waste-end tax revenues are at least questionable. States' experiences with waste-end taxes have illuminated serious pitfalls in waste-end tax approaches, according to a 1984 General Accounting Office (GAO) report:

> GAO found that the three states [studied] (1) have not collected the revenues they anticipated, (2) have not determined if the tax achieved its objective of encouraging more desirable waste management practices, and were concerned

that a similar federal tax may reduce state tax revenues or increase the incentive to illegally dispose of hazardous waste.*

The GAO report also pointed out very serious questions on the ability of the government to administer and collect such a tax. It is clear that there would be a need to create new data systems to implement a waste-end tax. In turn, these changes would impose new recordkeeping costs and burdens both for government and the taxpayers.

Such administrative and financial complexities could be avoided by utilizing a broad-based tax approach such as the MEET. As noted earlier in our testimony, the basic data sources already exist, and the type of tax is one with which the IRS already is familiar.

4. Any taxing provisions should recognize the reality of the international minerals market by avoiding the imposition of inequitable burdens on the domestic minerals industry vis-a-vis imports.

Domestic minerals prices are largely determined by the highly competitive international market. This fact leads to imposition of unfair burdens on the domestic mining and mineral processing industry whenever government-mandated costs do not fall equally on imports.

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* General Accounting Office, "State Experiences with Taxes on Generators or Disposers of Hazardous Waste," Report to the Chairman, Subcommittee on Commerce, Transportation and Tourism, Committee on Energy and Commerce, U.S. House of Representatives, May 4, 1984, p. ii.

The continued ability of mines and mineral processors in the United States to produce metals, including strategic minerals, is dependent upon the industry's competitiveness with foreign producers and, in particular, the industry's ability to absorb additional costs not borne by foreign competitors. The market prices for metals are a function of the international metals markets and therefore are strongly influenced by the production costs of foreign producers. As a result, U.S. producers cannot pass mandated costs on to customers via price increases. This requires the costs to be internalized, resulting in a weakened competitive position.

LIABILITY AND OTHER PROVISIONS

1. Limit joint and several liability for site cleanup to those circumstances in which it is appropriate under common law and include, wherever appropriate, apportionment of liability based on a responsible party's contribution to the harm.

State and federal courts now have the authority to impose joint and several liability when the circumstances of a case make such liability appropriate.

In 1984, the House would have imposed joint and several liability in all cases where more than one defendant was involved. In addition, apportionment would have been possible only after an adjudication that defendants were jointly and severally liable, and could have been done only on the basis of the harm being divisible, rather than defendants' contribution to harm. As a practical matter, divisibility of harm is far more difficult to prove than divisibility of contribution to harm, thus assuring that for most cases there would be no apportionment and each defendant would remain liable for the full cost of site cleanup.

Congress in reauthorizing CERCLA should recognize the right of apportionment based on the divisibility of defendants' contributions to the harm. Such an approach would treat involved parties more equitably. If some parties could not be identified or should be unable to pay their fair share of costs, the trust fund should pay those portions of the costs.

2. Strengthen post-closure liability protection so that companies that lawfully close and monitor hazardous waste disposal facilities for the required site-specific post-closure period, are not required to bear perpetual liability for those facilities.

Superfund currently imposes a $2.13/dry weight ton tax on all RCRA hazardous wastes received at a RCRA-permitted hazardous waste disposal facility. The trust fund created with these tax dollars is to be used (among other purposes) to pay for remedial action at these disposal facilities following their lawful closure and successful completion of a post-closure monitoring period.

Our industry has viewed the post-closure trust fund as a vehicle that, should mining industry wastes later be determined to be hazardous, could enable individual companies to close facilities on a site-specific basis in compliance with the law and, absent any negligence in closing and monitoring the site, legitimately end company involvement with that site. While our industry would require a means of participating in this system other than the current waste-end tax, we do support the concept of legitimate release from post-closure liability.

3. Require cleanup of sites so as to protect human health and the environment, based on site- and waste-specific conditions.

The issue of cleanup flexibility is important at all sites but particularly at mining sites where the wastes are not "hazardous substances" under RCRA and thus frequently have no standards that were designed for those specific circumstances.

EPA, in its National Contingency Plan (NCP) revisions, utilizes a flexible, site-by-site approach in determining the extent of cleanup, while at the same time making existing environmental standards a factor to be considered when determining site cleanup.

AMC strongly supports the current requirements of Section 111 of S. 51, as reported out of the Senate Environment and Public Works Committee. That bill maintains EPA's flexibility, stating that cleanup actions should assure protection of health and environment and are to be relevant and appropriate to each release of hazardous substances, pollutants or contaminants.

4. Limit Superfund's treatment of "pollutants and contaminants" to the cleanup of releases that, because of the amount and concentration of the pollutant or contaminant, could truly pose an imminent and substantial endangerment to health.

In 1984, both houses made extensive changes in the way Superfund dealt with "pollutants or contaminants," including establishing liability for releases or threatened releases of such substances. The general thrust was to make pollutants or contaminants equivalent to hazardous substances for the purposes of Superfund, including the victim compensation provisions of the bills.

Unfortunately, neither house incorporated a more reasonable definition of "pollutants or contaminants." Responses should only take place where the release or threatened release is in amounts and concentrations that could truly present an imminent and substantial threat.

It would be unreasonable to equate "pollutants or contaminants" with hazardous substances for every purpose under Superfund. "Imminent and substantial danger" should be retained as the threshold for government action and cost liability. The "danger" should be directly linked to the release of materials in amounts and concentrations that could pose an imminent and substantial danger to health and welfare.

5. Require that EPA revise the Hazard Ranking System/Mitre Model so that it can more accurately reflect relative risks between sites and eliminate the System's bias against sites having high volumes of low-toxicity wastes.

Superfund now requires that EPA examine sites and rank them according to a number of considerations based on relative risk to health, welfare or the environment, and to assign priorities to the known releases or threatened releases. The law does not require EPA to use the current Hazard Ranking System (HRS or Mitre Model) to accomplish the statutory goal.

Through studies done for AMC by TRC Environmental Consultants, Inc., it appears that the Mitre Model is an inappropriate tool for assessing risks at mining sites with their huge volumes of low-toxicity wastes located far from major population areas (see Appendix II).

The Mitre Model scores are based upon factors including, among others, quantity and toxicity of waste. For quantity, a maximum score in the Mitre Model is assigned when 10,000 drums or 2,500 tons of waste are present at a site. Ten thousand drums of chemical waste could take months or years to accumulate and could, depending on the contents and location, represent a potential environmental problem of major proportions, or could pose an extremely serious threat to health. Twenty-five hundred tons of relatively innocuous mining or mineral processing wastes, however, may be generated in only a few hours of operation at a typical facility and should not be considered equivalent to the "drum scenario" in any way.

In scoring the toxicity of a waste, the Mitre Model assigns a maximum score if heavy metals are present in any concentration. Most mine wastes will contain a fraction of a percent of heavy metals. Because of this presence, the wastes receive the same maximum scoring as wastes containing extremely toxic materials such as dioxin. Furthermore, the model fails to take into account the fact that metals will be attenuated by the soil whereas many other types of wastes will not.

As a result of these factors, the Mitre Model is not suitable for assessing the potential risk to the public or the environment from abandoned mining and mineral processing sites.

While the 1984 House bill was silent on this issue, the Senate Environment Committee unanimously approved an amendment, also contained in S. 51, that requires EPA to revise the HRS within 18 months from the bill's enactment. The revisions would make the

HRS/Mitre Model more accurately reflect the true degree of risk at sites. This provision stems from the senators' concern that the current system is inadequate and discriminates against high-volume, low-toxicity waste sites such as are found in the mining industry.

6. Clarify that Superfund tax provisions are not intended to be applied to intermediates, so that a reauthorized CERCLA will be consistent with current law as enacted by Congress in the Deficit Reduction Act of 1984.

In 1983, the Internal Revenue Service (IRS) proposed a rule interpreting CERCLA tax provisions in a way that would have imposed a tax on intermediate forms of copper, lead and zinc. Because this attempt was contrary to Congress' intent in enacting Superfund in 1980, the Congress included in the Deficit Reduction Act of 1984 clear confirmation of its original intent, thus nullifying certain aspects of the IRS proposed rule.

In reauthorizing Superfund, Congress should again clearly state its intention that intermediate forms of taxable feedstocks appearing in domestic minerals production are not subject to the feedstock tax. By so stating, Congress can ensure rationality and consistency in tax administration and avoid imposing an inequitable burden upon domestic minerals producers.

7. "Victim compensation" proposals to date have not struck a reasonable balance. New proposals should be considered on their merits, but should be considered apart from Superfund.

Victim compensation legislation should be kept separate from Superfund reauthorization because:

- Initial studies are not yet finished and further studies will likely be needed.

- "Victim compensation" is a very broad concept going beyond simply the releases and sites that are the subject of Superfund.

- Many victim compensation proposals would overturn basic principles of the tort law system, including proof of causation of harm, and such revolutionary approaches should be thoroughly debated on their own merits.

- Finally, victim compensation could cripple efforts to clean up sites if compensation were to be financed from and integrated with the site cleanup funds and requirements of Superfund.

APPENDIX I

SUPERFUND TAX ON MINERALS INDUSTRY:
CURRENT LAW COMPARED TO H.R. 5640

(Based on 1983 data in short tons)

Current Law (Annual Rate) - $4,305,806

H.R. 5640	With Waste-End Tax	Without Waste-End Tax
1985	$109,261,835	$109,261,835
1986	136,405,024	136,405,024
1987	141,324,767	172,231,514
1988	156,105,794	182,127,413
1989	156,105,794	191,454,824
1990	156,105,794	191,454,824
TOTAL[1]	$855,309,008	$982,935,494

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[1] Not adjusted for rate of inflation as required by H.R. 5640 (i.e. percent of producer price increase). Consequently, the total tax is substantially understated.

SUPERFUND TAX ON MINERALS INDUSTRY - CURRENT LAW COMPARED TO H.R. 5640
(1983 data in short tons)

SUBSTANCE	CURRENT LAW TAX RATE/TON	1985 H.R. 5640 TAX RATE/TON	1983 AVG. PRICE/TON	U.S. PROD.	U.S. IMP.	TOTAL TAXABLE QUANTITY	CURRENT LAW REVENUE	1985 H.R. 5640 REVENUE
Antimony	$4.45	$30.00	$1,800	27,000	11,000	38,000	$ 169,100	$1,140,000
Arsenic	4.45	30.00	4,200	Unknown	187	187	800	5,610
Arsenic Trioxide	3.41	12.97	700	Unknown	12,125	12,125	41,300	157,261
Bromine	4.45	9.73	625	190,000	2,500	192,500	856,600	1,873,025
Cadmium	4.45	30.00	2,200	1,102	2,425	3,527	15,700	105,810
Chromium	4.45	30.00	7,500	0	210,300	254,800	934,500	7,644,300
Chromite	1.52	1.32	74	0	210,000	210,000	319,200	319,270
Cobalt	4.45	30.00	25,000	350	9,000	9,350	41,600	280,500
Cupric Sulfate	1.87	23.18	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cupric Oxide	3.59	30.00	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cuprous Oxide	3.97	30.30	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Lead Oxide	4.14	No tax	Unknown	185,224	13,636	198,860	823,280	No tax
Mercury	4.45	30.00	8,700	1,482	342	1,824	8,100	54,720
Nickel	4.45	30.00	6,400	88,700	144,000	232,700	1,035,515	6,981,000
Zinc Chloride	2.22	10.55	Unknown	8,775	487	9,262	20,562	97,714
Zinc Oxide	No tax	14.43	789	129,598	31,588	161,184	0	2,325,885
Zinc Sulfate	1.90	8.30	Unknown	10,969	584	20,815	39,549	172,764
Aluminum Sulfate	No tax	3.52	Unknown	Unknown	Unknown	Unknown	0	Unknown
Aluminum Phosphide	No tax	30.00	Unknown	Unknown	Unknown	Unknown	0	Unknown
Asbestos	No tax	5.76	403	77,162	220,462	297,624	0	1,714,314
Barium Sulfide	2.13	7.13	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Lead	No tax	8.27	440	1,146,402	148,812	1,295,214	0	10,711,419
Copper	No tax	23.60	1,560	1,600,000	550,000	2,150,000	0	50,740,000
Lithium Carbonate	No tax	30.00	2,960	30,000[1]	100	30,100	0	903,000
Manganese	No tax	22.69	64	0	485,000	485,000	0	11,004,650
Selenium	No tax	30.00	7,600	386	331	717	0	21,510
Uranium Oxide	No tax	30.00	38.21[2]	13,500	41[2]	13,500	0	405,000
Vanadium	No tax	30.00	7,000	3,401	1,750	5,151	0	154,530
Zinc	No tax	12.48	840	325,181	672,409	997,590	0	12,449,923
TOTALS							$4,305,806	$109,261,835

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[1] 1984 production estimate

[2] Survey of U.S. Uranium Marketing Activity, DOE/EIA-0403 (1983)

BEST COPY AVAILABLE

SUPERFUND TAX ON MINERALS INDUSTRY - CURRENT LAW COMPARED TO H.R. 5640
(1986 - 1990 PROJECTIONS)

	1986 Rate	1986 Revenue	1987 Rate	1987 Revenue	1987 W/O Waste End Rate	1987 W/O Waste End Revenue	1988 Rate	1988 Revenue	1988 W/O Waste End Rate	1988 W/O Waste End Revenue
Antimony	30.00	1,140,000.00	30.00	1,140,000.00	35.00	1,330,000.00	30.00	1,140,000.00	35.00	1,330,000.00
Antimony Dioxide	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Arsenic	30.00	5,610.00	30.00	5,610.00	35.00	6,545.00	30.00	5,610.00	35.00	6,545.00
Arsenic Trioxide	17.29	209,641.00	19.46	235,953.00	25.94	314,523.00	25.94	314,523.00	30.26	366,903.00
Promine	12.97	2,496,725.00	14.59	2,808,575.00	19.46	3,746,050.00	19.46	3,746,050.00	22.70	4,369,750.00
admium	30.00	105,810.00	30.00	105,810.00	35.00	123,445.00	30.00	105,810.00	35.00	123,445.00
hromium	30.00	7,644,000.00	30.00	7,644,000.00	35.00	8,918,000.00	30.00	7,644,000.00	35.00	8,918,000.00
Chromite	1.52	319,200.00	1.52	319,200.00	1.70	357,000.00	1.70	357,000.00	1.98	415,800.00
Cobalt	30.00	280,500.00	30.00	280,500.00	35.00	327,250.00	30.00	280,500.00	35.00	327,250.00
Cupric Sulfate	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cupric Oxide	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cuprous Oxide	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Lead Oxide										
Mercury	30.00	54,720.00	30.00	54,720.00	35.00	63,840.00	30.00	54,720.00	35.00	63,840.00
Nickel	30.00	6,981,000.00	30.00	6,981,000.00	35.00	8,144,500.00	30.00	6,981,000.00	35.00	8,144,500.00
Zinc Chloride	14.07	130,316.00	15.83	146,617.00	21.10	195,428.00	21.10	195,428.00	24.62	228,030.00
Zinc Oxide	19.24	3,101,180.00	21.65	3,489,634.00	28.86	4,651,770.00	28.86	4,651,770.00	33.67	5,427,065.00
Zinc Sulfate	11.07	230,422.00	12.45	259,146.00	16.60	345,529.00	16.60	345,529.00	19.37	403,187.00
Aluminum Sulfate	4.69	unknown	5.28	unknown	7.04	unknown	7.04	unknown	8.40	unknown
Aluminum Phosphate	30.00	unknown	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Asbestos	7.68	2,285,752.00	8.64	2,571,471.00	11.52	3,428,628.00	11.52	3,428,628.00	13.44	400,067.00
Barium Sulfide	9.51	unknown	10.70	unknown	14.26	unknown	14.26	unknown	16.64	unknown
Lead	11.03	14,286,210.00	12.41	16,073,606.00	16.54	21,422,840.00	16.54	21,422,840.00	19.30	24,997,630.00
Copper	30.00	64,500,000.00	30.00	64,500,000.00	35.00	75,250,000.00	30.00	64,500,000.00	35.00	75,250,000.00
Lithium Carbonate	30.00	903,000.00	30.00	903,000.00	35.00	1,053,500.00	30.00	903,000.00	35.00	1,053,500.00
Manganese	30.00	14,550,000.00	30.00	14,550,000.00	35.00	16,975,000.00	30.00	14,550,000.00	35.00	16,975,000.00
Selenium	30.00	21,510.00	30.00	21,510.00	35.00	25,095.00	30.00	21,510.00	35.00	25,095.00
Uranium Oxide	30.00	405,000.00	30.00	405,000.00	35.00	472,500.00	30.00	405,000.00	35.00	472,500.00
Vanadium	30.00	154,530.00	30.00	154,530.00	35.00	180,285.00	30.00	154,530.00	35.00	180,285.00
Zinc	16.64	16,599,898.00	18.72	18,674,885.00	24.96	24,899,846.00	24.96	24,898,846.00	29.12	29,049,821.00
TOTAL		$136,405,024.00		$141,324,767.00		$172,231,574.00		$156,105,794.00		$182,127,413.00

SUPERFUND TAX ON MINERALS INDUSTRY - CURRENT LAW COMPARED TO H.R. 5640
(1986 - 1990 PROJECTIONS)
(Continued)

	1989 Rate	1989 Revenue	1989 W/O Waste End Rate	1989 W/O Waste End Revenue	1990 Rate	1990 Revenue	1990 W/O Waste End Rate	1990 W/O Waste End Revenue
Antimony	30.00	1,140,000.00	35.00	1,330,000.00	30.00	1,140,000.00	35.00	1,330,000.00
Antimony Dioxide	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Arsenic	30.00	5,610.00	35.00	6,545.00	30.00	5,610.00	35.00	6,545.00
Arsenic Trioxide	25.94	314,523.00	34.59	419,404.00	25.94	314,523.00	34.59	419,404.00
Bromine	19.46	3,746,050.00	25.95	4,995,375.00	19.46	3,746,050.00	25.95	4,995,375.00
Cadmium	30.00	105,810.00	35.00	123,445.00	30.00	105,810.00	35.00	123,445.00
Chromium	30.00	7,644,000.00	35.00	8,918,000.00	30.00	7,644,000.00	35.00	8,918,000.00
Chromite	1.70	357,000.00	2.27	476,700.00	1.70	357,000.00	2.27	476,700.00
Cobalt	30.00	280,500.00	35.00	327,250.00	30.00	280,500.00	35.00	327,250.00
Cupric Sulfate	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cupric Oxide	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Cuprous Oxide	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Lead Oxide								
Mercury	30.00	54,720.00	35.00	63,840.00	30.00	54,720.00	35.00	63,840.00
Nickel	30.00	6,981,000.00	35.00	8,144,500.00	30.00	6,981,000.00	35.00	8,144,500.00
Zinc Chloride	21.10	195,428.00	28.13	260,540.00	21.10	195,428.00	28.13	260,540.00
Zinc Oxide	28.86	4,651,770.00	35.00	5,641,440.00	28.86	4,651,770.00	35.00	5,641,440.00
Zinc Sulfate	16.60	345,529.00	22.13	460,636.00	16.60	345,529.00	22.13	460,636.00
Aluminum Sulfate	7.04	unknown	9.35	unknown	7.04	unknown	9.35	unknown
Aluminum Phosphate	30.00	unknown	35.00	unknown	30.00	unknown	35.00	unknown
Asbestos	11.52	3,428,628.00	15.36	4,571,505.00	11.52	3,428,628.00	15.36	4,571,505.00
Barium Sulfide	14.26	unknown	19.01	unknown	14.26	unknown	19.01	unknown
Lead	16.54	21,422,840.00	22.05	28,559,469.00	16.54	21,422,840.00	22.05	28,559,469.00
Copper	30.00	64,500,000.00	35.00	75,250,000.00	30.00	64,500,000.00	35.00	75,250,000.00
Lithium Carbonate	30.00	903,000.00	35.00	1,053,500.00	30.00	903,000.00	35.00	1,053,000.00
Manganese	30.00	14,500,000.00	35.00	16,975,000.00	30.00	14,500,000.00	35.00	16,975,000.00
Selenium	30.00	21,510.00	35.00	25,095.00	30.00	21,510.00	35.00	25,095.00
Uranium Oxide	30.00	405,000.00	35.00	472,500.00	30.00	405,000.00	35.00	472,500.00
Vanadium	30.00	154,530.00	35.00	180,285.00	30.00	154,530.00	35.00	180,285.00
Zinc	24.96	24,898,846.00	33.28	33,199,795.00	24.96	24,898,846.00	33.28	33,199,795.00
TOTAL		$156,105,794.00		$191,454,824.00		$156,105,794.00		$191,454,824.00

H.R. 5640

SUPERFUND TAX PROVISION

SEC. [illegible]. INCREASE IN TAX ON CERTAIN CHEMICALS.

(a) INCREASE IN RATE OF TAX; ADDITIONAL CHEMICALS TAXED.—Subsection (b) of section 4661 of the Internal Revenue Code of 1954 (relating to amount of tax imposed on certain chemicals) is amended by striking out the table contained in such subsection and inserting in lieu thereof the following:

In the case of—	[illegible]			
	[illegible]	[illegible]	[illegible]	[illegible]
Organic substances:				
[illegible]	$29.91	$30.00	$30.00	$30.00
[illegible]	6.60	8.80	9.90	13.20
[illegible]	9.79	13.05	14.68	19.58
[illegible]	4.87	5.60	6.30	8.40
[illegible]	5.15	6.87	7.73	10.30
[illegible]	5.02	6.69	7.53	10.04
[illegible]	1.78	2.37	2.67	3.56
[illegible]	6.89	9.19	10.33	13.78
[illegible]	3.44	3.44	3.44	4.60
[illegible]	6.89	9.19	10.33	13.78
[illegible]	5.87	7.83	8.80	11.74
[illegible]	5.19	6.92	7.78	10.38
[illegible] (before [illegible])	10.65	14.85	16.75	22.35
[illegible] (after [illegible])				15.40
Inorganic substances:				
[illegible]	3.52	4.80	5.70	7.04
[illegible]	30.00	30.00	30.00	30.00
[illegible]	2.64	3.52	3.96	5.28
[illegible]	30.00	30.00	30.00	30.00
[illegible]	[illegible]	30.00	30.00	30.00
[illegible]	30.00	30.00	30.00	30.00
[illegible]	12.97	17.29	19.46	25.94
[illegible]	5.76	7.68	8.64	11.52
[illegible]	7.13	9.51	10.70	14.26
[illegible]	9.73	12.97	14.59	19.46
[illegible]	30.00	30.00	30.00	30.00
[illegible]	3.05	4.07	4.57	6.10
[illegible]	1.52	1.52	1.52	1.70
[illegible]	30.00	30.00	30.00	30.00
[illegible]	26.00	30.00	30.00	30.00
[illegible]	23.96	30.00	30.00	30.00
[illegible]	30.00	30.00	30.00	30.00
[illegible]	23.18	30.00	30.00	30.00
[illegible]	[illegible]	[illegible]	30.00	30.00
[illegible]	0.94	1.25	1.41	1.88
[illegible]	23.56	30.00	30.00	30.00
[illegible]	8.77	11.63	12.41	16.54
[illegible]	30.00	30.00	30.00	30.00
[illegible]	27.00	30.00	30.00	30.00
[illegible]	30.00	30.00	30.00	30.00
[illegible]	30.00	30.00	30.00	30.00
[illegible]	3.05	4.07	4.57	6.10
[illegible]	7.65	10.20	11.48	15.30
[illegible]	6.65	6.65	6.65	6.65
[illegible]	15.02	20.00	22.54	30.00
[illegible]	9.83	13.11	14.75	19.66
[illegible]	30.00	30.00	30.00	30.00
[illegible]	18.48	24.64	27.72	30.00
[illegible]	2.82	3.76	4.23	5.64
[illegible]	30.00	30.00	30.00	30.00
[illegible]	30.00	30.00	30.00	30.00
[illegible]	0.78	1.04	1.17	1.56
[illegible]	30.00	30.00	30.00	30.00
[illegible]	30.00	30.00	30.00	30.00
[illegible]	12.48	16.64	18.72	24.96
[illegible]	10.55	14.07	15.83	21.10
[illegible]	14.43	19.24	21.65	28.86
[illegible]	8.90	11.87	12.45	16.60

H.R. 5640

IF NO WASTE-END TAX IS ENACTED

SEC. [illegible]. INCREASE IN TAX IF WASTE-END TAX NOT ENACTED.

(a) INCREASE IN TAX.—

(1) TAX ON PETROLEUM.—Subsections (a) and (b) of section 4611 of the Internal Revenue Code of 1954 (relating to environmental tax on petroleum), as amended by section 502, are each amended by striking out "7.86 cents" and inserting in lieu thereof "9.65 cents".

(2) TAX ON CERTAIN CHEMICALS.—Subsection (b) of section 4661 of such Code (relating to amount of tax imposed on certain chemicals), as amended by section 503, is amended by striking out the table contained in such subsection and inserting in lieu thereof the following:

In the case of:	The tax (before any inflation adjustment) is the following amount per ton:		
	Sales during 1987	Sales during 1988 and 1989	Sales after 1989 and before the termination date
Organic substances:			
Acetylene	$25.00	$25.00	$25.00
Benzene	13.20	15.40	17.60
Butadiene	19.58	22.84	26.11
Butane	8.40	9.80	11.20
Butylene	10.30	12.02	13.73
Coal-derived light oils	10.04	11.71	13.38
Coal tars	3.56	4.15	4.75
Ethylene	13.78	16.08	18.37
Methane	4.00	4.67	5.33
Naphthalene	13.78	16.08	18.37
Propylene	11.74	13.70	15.65
Toluene	10.38	12.11	13.84
Xylene	18.66	21.77	24.88
Inorganic substances:			
Aluminum sulfate	7.01	8.18	9.35
Aluminum phosphate	35.00	35.00	35.00
Ammonia	5.28	6.16	7.04
Antimony	35.00	35.00	35.00
Antimony trioxide	35.00	35.00	35.00
Arsenic	35.00	35.00	35.00
Arsenic trioxide	25.94	30.26	34.59
Asbestos	11.52	13.44	15.36
Barium sulfide	14.26	16.64	19.01
Bromine	19.46	22.70	25.95
Cadmium	35.00	35.00	35.00
Chlorine	6.10	7.12	8.13
Chromite	1.70	1.98	2.27
Chromium	35.00	35.00	35.00
Cobalt	35.00	35.00	35.00
Copper	35.00	35.00	35.00
Cupric oxide	35.00	35.00	35.00
Cupric sulfate	35.00	35.00	35.00
Cuprous oxide	35.00	35.00	35.00
Hydrochloric acid	1.88	2.19	2.51
Hydrogen fluoride	35.00	35.00	35.00
Lead	16.54	19.30	22.05
Lithium carbonate	35.00	35.00	35.00
Manganese	35.00	35.00	35.00
Mercury	35.00	35.00	35.00
Nickel	35.00	35.00	35.00
Nitric acid	6.10	7.12	8.13
Phosphoric acid	15.30	17.85	20.40
Phosphorus	7.50	7.50	7.50
Potassium dichromate	30.06	35.00	35.00
Potassium hydroxide	19.66	22.94	26.21
Selenium	35.00	35.00	35.00
Sodium dichromate	35.00	35.00	35.00
Sodium hydroxide	5.64	6.58	7.52
Stannic chloride	35.00	35.00	35.00
Stannous chloride	35.00	35.00	35.00
Sulfuric acid	1.56	1.82	2.08
Uranium oxide	35.00	35.00	35.00
Vanadium	35.00	35.00	35.00
Zinc	24.96	29.12	33.28
Zinc chloride	21.10	24.62	28.13
Zinc oxide	28.86	33.67	35.00
Zinc sulfate	16.60	19.37	22.13".

APPENDIX II

ANALYSIS OF MINING SITES ON THE NATIONAL PRIORITIES LIST

TRC Environmental Consultants, Inc.

PREPARED FOR:

AMERICAN MINING CONGRESS
1920 N. STREET, N.W., SUITE 300
WASHINGTON, D.C. 20036

PREPARED BY:

BRIAN L. MURPHY, Ph.D.
SENIOR CONSULTING SCIENTIST

WILLIAM W. BECK, JR., P.G.
SENIOR CONSULTING GEOLOGIST

JUNE 9, 1983
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TRC PROJECT NO. 2199-W12

800 Connecticut Blvd.
East Hartford, CT 06108
(203) 289-8631

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1.0 INTRODUCTION

The December 20, 1982 listing of 418 sites on the National Priorities List (NPL) was the culmination of an effort by EPA and numerous state agencies to identify the hazardous waste disposal sites in the United States which they feel present the greatest risk to human health and/or the environment.

Sites believed to present a hazardous waste problem were designated for the NPL by a two step procedure:

1. The states nominated sites for the NPL. Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which established this procedure, each state must have at least one site on the NPL.
2. An intendedly objective scoring system developed by the Mitre Corporation for EPA (the "Mitre Model") was then used to select sites. Mitre Model scores were furnished by the states with their nomination. In reality, EPA or EPA contractors did the scoring for the states in many cases.

When implementing the Section 103(c) notification requirements, EPA received 11,000 reports of facilities where hazardous wastes are or had been potentially treated, stored, or disposed (Federal Register/Vol. 47, No. 137, July 16, 1983. Page 31181.). Assuming this is correct, 690, or about 6 percent of all sites, were nominated for the NPL. Thus, the winnowing process in Step 1 appears to be much greater than in Step 2 (418/690 = 61 percent). For mining sites, 31 locations were nominated, of which 17 sites were selected. Mining sites thus represent only about 4 percent (17/418) of the total NPL. Presumably, like the other sites, the mining sites nominated represent only a small fraction of the total mining site population.

Step 2 of the listing process is a comparison of Mitre Model scores to compose the NPL. The model calculates scores for five "pathways" of potential

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*Times Beach, Missouri became the 419th site soon after the initial listing, and on September 1, 1983 an additional 133 sites were listed which were too late for inclusion in this analysis.

human exposure: ground water, surface water, air, direct contact, and fire and explosion. The first three pathways are combined (by taking the square root of the sum of the squares) into an overall "migration" score. The migration score is essentially the determinant for listing on the NPL. According to the National Contingency Plan (47 FR, 137, 31180, July 16, 1982) placement of sites on the NPL is based primarily on the migration score. The fire and explosion and direct contact scores may be used to determine if emergency attention is needed.

The score for each of the three migration pathways is the product of scores for three "factors":

1. The existence or likelihood of a release. An "observed release" which is basically a measurement of concentration above background at any location automatically produces the maximum score.
2. A "characteristics" score which is the sum of scores for quantity and toxicity/persistence for water pathways and quantity, toxicity, reactivity, and incompatibility for the air pathway. The score for "quantity" is determined by the total volume of waste while the score for parameters like "toxicity/persistence" is determined by the most toxic and persistent component.
3. Characteristics of the population or sensitive environment at risk such as distance to point of exposure and number of people involved. Potential scores for population factors are much larger than for purely environmental factors.

Use of the Mitre Model involves an explicit statement of what the problem is believed to be. That is, the substances of concern, the exposure pathway, and the populations or resources at risk are identified as part of the scoring.

In this report, the validity of the Mitre Model is analyzed in general but also, since the model was developed primarily for analysis of chemical waste dumps, the focus was primarily on the validity of these problem statements for mining sites.

In this report mining sites are defined by whether the practices at the site would qualify an operator for membership in the American Mining Congress (AMC). These practices include extraction, smelting, and refining but not fabrication into a final product. Only sites where mining practices are responsible for most of the Mitre Model score are analyzed. Using these criteria the 31 mining sites analyzed, including 17 NPL sites, are shown in Table 1.

This report is concerned solely with the technical validity of the listing process. Legal issues, such as the propriety of including mining sites in Superfund, are not considered. Nor is the primary concern a site by site characterization; this is done only to the extent necessary to provide perspective on the validity of the Mitre Model results.

Topics are:

- How 17 mining sites came to be selected for the NPL, specifically patterns apparent in their nomination by the states and in their scoring by the Mitre Model (Section 2).
- Validity of the Mitre Model analysis (Section 3):
  - For the 17 NPL mining Sites
  - For mining sites in general
  - For any use

  and
- Recommendations for alternative analytical methods for mining sites (Section 3).

TABLE 1

SITES ANALYZED

	NPL Sites	Mining Activity*
1.	Anaconda Smelter Anaconda, MT	Copper smelter
2.	Bunker Hill Smelter Smelterville, ID	Lead and zinc smelter
3.	California Gulch Leadville, CO	Metal mines
4.	Celtor Chemical Humboldt County, CA	Metals reclamation mill
5.	Central City - Idaho Springs Clear Creek and Gilpin Counties, CO	Gold mines
6.	Commencement Bay Tacoma, WA	Metal smelting
7.	Homestake Mining Milan, NM	Uranium mill
8.	Iron Mountain Mine Shasta County, CA	Copper mines
9.	Milltown Reservoir Milltown, MT	Copper mines and smelter
10.	Mountain View Mobile Homes Globe, AZ	Asbestos mills
11.	Palmerton Zinc Palmerton, PA	Zinc refinery and smelter
12.	Silver Bow Creek Silver Bow and Deer Lodge Counties, MT	Metal mines and mill
13.	Tar Creek - Kansas Cherokee County, KA	Zinc and lead mines
14.	Tar Creek - Oklahoma Ottawa County, OK	Zinc and lead mines
15.	United Nuclear Churchrock, NM	Uranium mill
16.	U.S. Titanium Nelson County, VA	Mine and refinery
17.	Whitewood Creek Black Hills, SD	Gold mines and mills

TABLE 1 (Continued)

SITES ANALYZED

NPL Sites	Mining Activity*
18. Alder Mill Twisp, WA	Metals mill
19. Anaconda Copper Weed Hts, NV	Copper mine
20. Anaconda Refinery Great Falls, MT	Copper and zinc refinery
21. ASARCO Globe Facility Commerce City, CO	Metal recovery (smelting)
22. Blackbird Mine Cobalt, ID	Mine
23. Gateway Mill Site Gateway, CO	Vanadium mill
24. Hendricks Mine Boulder, CO	Radium and fluorspar mill
25. Holden Mine Holden Village, WA	Metals mine
26. Loma Mill Loma, CO	Vanadium mill
27. Placerville Tram Placerville, CO	Vanadium tram/ore bin
28. Rio Tinto Mountain City, NV	Copper mine
29. Sawpit Tram Sawpit, CO	Vanadium tram/ore bin
30. Silver Mountain Mine Loomis, WA	Gold and silver mine
31. Vanadium Mill Site Vanadium, CO	Vanadium mill

*This is the mining activity mainly responsible for the Mitre Model score. At some sites nonmining uses also contribute to the score. At other sites the use has now changed from that listed.

2.0 HOW MINING SITES CAME TO BE LISTED

This section analyzes the two steps in listing: (1) Nomination and (2) Comparison of Mitre Model scores. In order to obtain an overview of the process, the EPA officials involved in the process in Regions III, VI, VII, VIII, IX, and X, as well as Washington were consulted. Contacts were also made with officials in the States of Idaho, New Mexico, Oklahoma, Virginia and Washington. The individuals contacted together with the topics discussed are shown in Table 2.

2.1 Nomination Determined by Extent of Existing Information

The most common reason given by those contacted as to why certain sites (not necessarily mining) were chosen was that they were "well known." Of course, this may mean that a site is already thought to have environmental problems but it also means that previous information has probably been collected about a site. This is important because in generating Mitre Model scores to be submitted with the nomination a general rule is: The more information available the higher the score. This result is as true for sites not causing any significant harm to the environment as it is for genuine problem sites.

The Mitre Model score rises with the available information for the following reasons. The instructions for using the model specify that where there is no data for a factor it is assigned a value of zero. Further, where data are lacking for two or more factors the entire pathway score (air, ground water, or surface water) is set to zero. Finally, the maximum score for any pathway in general only occurs for a measurement, or other conclusive

TABLE 2

INDIVIDUALS AND ORGANIZATIONS CONTACTED DURING MITRE MODEL ANALYSIS

Individual/Organization	Topic
Tedd Jett, Virginia State Water Control Board, Valley Regional Office	U.S. Titanium, VA
Sam Donnelly, Director, EPA Lab, Annapolis, MD	U.S. Titanium, VA
Dr. Gulevich, Virginia, Department of Environmental Protection, Office of Hazardous Waste	U.S. Titanium, VA
Al Willett, Virginia State Water Control Board	U.S. Titanium, VA
Mr. Fairchild, U.S. Geological Survey, Oklahoma City	Tar Creek, OK
Sue Lutz, Librarian, Oklahoma Water Resources Board, Oklahoma City, OK	Tar Creek, OK
Ray Peterson, EPA, Region X, Seattle, WA	Bunker Hill, ID
Jack Sceva, EPA, Region X, Seattle, WA	Bunker Hill, ID
Idaho Department of Health and Welfare, Division of Health	Bunker Hill, ID
Tony Bartolomeo and Pat McManus, EPA, Region III, Philadelphia, PA	Palmerton Zinc, PA
Bill Wentworth, N.U.S., Field Investigation Team	Palmerton Zinc, PA
Paula Bisson, Compliance Branch, EPA, Region IX, San Francisco, CA	Mountain View Mobile Homes, AZ
Dwight Hoenig, EPA, Region VI, Dallas, TX	Tar Creek, OK, Homestake Mining, NM, United Nuclear, NM
Alice Fuerst, EPA, Region VII, Kansas City, MO	Tar Creek, KA
Bill Rothenmeyer, EPA, Region VIII, Denver, CO	Central City/Clear Creek, CO and California Gulch
Stan Hitt, Soil Scientist, EPA, Region VI, Dallas, TX	Tar Creek, OK
Ken Alkema, EPA, Region VIII, Helena, MT	Anaconda Smelter, ASARCO, and Milltown Reservoir, MT

TABLE 2 (Continued)

INDIVIDUALS AND ORGANIZATIONS CONTACTED DURING MITRE MODEL ANALYSIS

Individual/Organization	Topic
Steve Caldwell, EPA, Washington, D.C.	Guidance furnished states, overview of scoring results
Stephen Romanow, EPA, Region VI, Dallas, TX	United Nuclear and Homestake Mining, NM
Trent Thomas, New Mexico Environmental Improvement Division	Homestake and United Nuclear, NM
B. Gallaher, New Mexico Environmental Improvement Division, Water Pollution Control Bureau	Homestake Mining Company, NM
Eric Johnson, EPA, Region III, Philadelphia, PA	Palmerton Zinc, PA
Ron Conrad, New Mexico Environmental Improvement Division	United Nuclear, NM
Jim Dunn, EPA, Region VIII, Helena, MT	Anaconda Smelter, MT Anaconda Refinery, MT
Mike Hiel, Montana Department of State Lands, Helena, MT	Silver Bow Creek, MT
Terry Grotbo, Montana Department of State Lands Helena, MT	Silver Bow Creek, MT
Ray Peterson, Water Quality Bureau, Montana Department of Health and Environment, Helena, MT	Silver Bow Creek, MT
Ted Duaime, Montana Bureau of Mines and Geology, Butte, MT	Silver Bow Creek, MT
Harry Van Drielen, Nevada Conservation and Natural Resources Department, Environmental Protection Division, Carson City, NV	Rio Tinto Copper Mine, NV The Anaconda Copper Company site in Weed Heights, NV
John Arrigo, Montana Health Department, Solid Waste, Helena, MT	Anaconda Refinery, Great Falls, MT
Steve Provant, Idaho Department of Health and Welfare, Division of the Environment, Boise, ID	Blackbird Mine, Cobalt, ID
Philip Nyberg, Region VIII, U.S. Environmental Protection Agency	Loma, Gateway, Sawpit, Nieumire, and Placerville vanadium sites in Colorado and Hendricks Mining fluorspar site

evidence, of a concentration above background (irrespective of whether or not that concentration is significant in terms of health standards and criteria). Several individuals involved in the nomination process indicated that they had to abandon scoring a number of sites where there was insufficient evidence.

Most of the 31 mining sites nominated for the NPL have prior studies; some have a history of EPA and/or state negotiations and in a few cases consent decrees. Further evidence of the fact that these sites are well known is the fact that all of the 17 NPL sites and 10 of the 14 additional sites have "observed" (that is, measured releases) in some route category.

Although a site may be well known for some environmental impact it may not be in an area scored by the Mitre Model. For mining sites, for example, acid mine drainage (pH) effects and the effect on aquatic life are often of concern, this is the case at 8 of the 17 NPL sites. No score is given for acidity in the Mitre Model.* The point is that unrelated or irrelevant studies from a human hazard standpoint can increase the Mitre Model score by providing a basis for an "observed" release. As described further below, the Mitre Model score is almost entirely determined by the amount of information available about a site (particularly measurements) and how many people live near a site rather than by any real measure of risk.

2.2 Cost May Also Be a Factor in Nomination

The individuals interviewed about the site nomination process, (again not just for mining sites), mentioned three other considerations. First, in some cases they tried to nominate sites that were thought to pose an actual health risk, an aim which requires no further comment. Secondly, they acknowledged that political visibility was a factor. Finally, they indicated that for some sites there was a financial incentive for nomination of particular sites. This could be either through direct access to Superfund money or by getting Federal help in seeking cost reimbursement from private parties. This aspect is important for mining sites because they may be among the most expensive to fully remediate when there are enormous worked areas and waste quantities. The financial incentive issue may vary from state to state. In some cases, irrespective of whether remediation makes sense from an overall cost/benefit standpoint, there may be an incentive for states to nominate high cost sites rather than low cost when Superfund pays 90 percent of the cost. In other cases, the 10 percent state payment required may be a disincentive to listing, particularly for very expensive sites to remediate. A numer of states do not have a mechanism, apart from general revenues, to fund this 10 percent contribution.*

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*Effects of acid mine drainage would not seem in themselves to constitute an "observed release." According to the National Contingency Plan, evidence of a release must be quantitative, such as measured levels of contaminants above background concentrations.

2.3 How the Mitre Model Scores Mining Sites

The decision to list some of the nominated mining sites is based on Mitre Model results from exposure through air, ground water, and surface water pathways with a combined score cutoff point of 28.5. A number of sites were also scored on the basis of direct contact and one NPL mining site was scored on the basis of fire and explosion although there was nothing ignitable at the site. This and the fact that 3 of the 31 sites (Sites 8, 21, and 25) examined had numerical scoring errors (that is, errors in addition, etc.) indicates a lack of quality control. It has not been possible to investigate more subtle quality control matters involving the acquisition and use of data.

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*In order to expedite Superfund activities EPA no longer requires state contributions during planning activities. Contributions by the state are still required for the actual remediation.

Table 3 shows which routes contributed to scoring at the 31 sites. Unlike ground water and surface water the air route only contributes when there is a measured release (rather than a likely release). The reason the air pathway does not occur for the non-NPL sites is that they generally do not have as extensive measurements as do the NPL sites. Almost all mining sites consider both ground and surface water pathways in the scoring with the highest scores generally being obtained for the ground water.

Overall structure of the model in combining source, release, and population information is shown in Figure 1. Note that as illustrated the information required is designed to be readily available rather than selfconsistent. For example, quantity of waste refers to everything at the site even though only a small portion may be toxic.

To gain some insight into what distinguishes the NPL from the non-NPL sites a sensitivity analysis was performed for each parameter occurring in each pathway score. This was done by decreasing each parameter score by 50 percent and calculating the overall change in the total score. To clarify this procedure, an example follows. At the first entry in Table 1, the Anaconda Smelter Site in Anaconda, Montana, the total migration score is 58.7. In obtaining this result, "quantity of waste" in the ground water pathway was scored as 8 points. If the quantity of waste had been scored as 4 points, the migration score would drop by 6.0 points to 52.7. For the parameter "toxicity/persistence" in the surface water pathway a score of 18 was recorded. If this score had been recorded as 9 points, the migration score would drop by 2.7 points to 56.0. Hence we describe the overall score

TABLE 3

MITRE MODEL SCORING

Percentage Breakdown by Migration Pathways

	Air (%)	Ground Water (%)	Surface Water (%)
NPL Sites (17)			
Considered	41	94	88
Highest Score	18	65	18
Non-NPL Sites (14)			
Considered	0	100	100
Highest Score	0	71	29

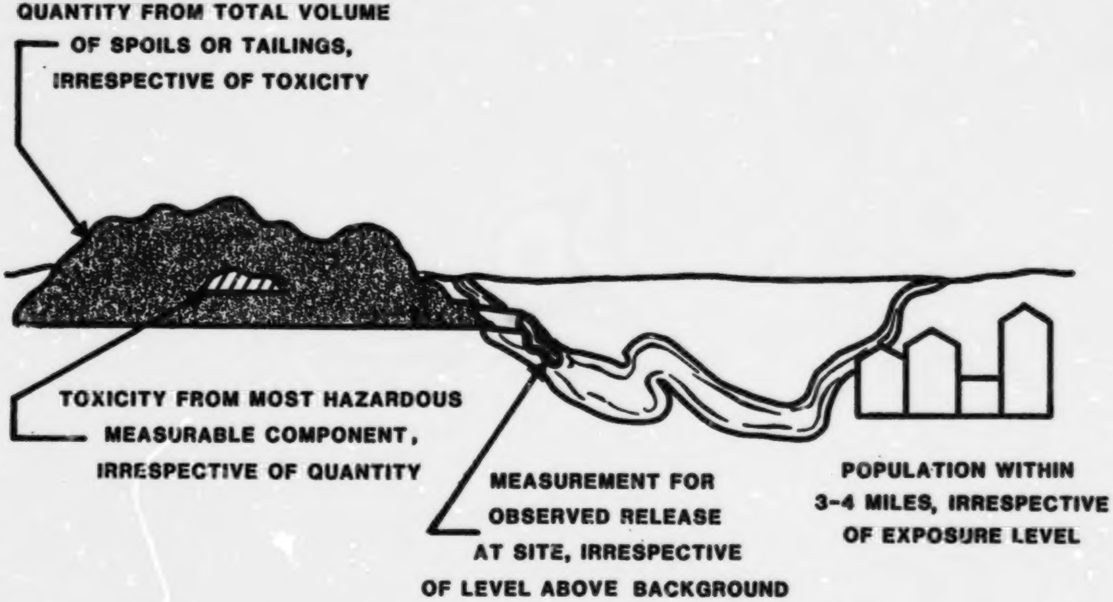
QUANTITY FROM TOTAL VOLUME OF SPOILS OR TAILINGS, IRRESPECTIVE OF TOXICITY
TOXICITY FROM MOST HAZARDOUS MEASURABLE COMPONENT, IRRESPECTIVE OF QUANTITY
MEASUREMENT FOR OBSERVED RELEASE AT SITE, IRRESPECTIVE OF LEVEL ABOVE BACKGROUND
POPULATION WITHIN 3-4 MILES, IRRESPECTIVE OF EXPOSURE LEVEL

Figure 1.

OVERVIEW: MITRE MODEL METHODOLOGY

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as being more sensitive to the value of the first parameter. Table 4 shows the results when all pathways are combined so that "observed release" represents any of the three pathways, etc. Different pathways were combined because basically they all behave the same way.*

The fact that the maximum number of sites occurs along the diagonal in Table 4 indicates a consistent pattern of parameter importance. Whether or not there is an observed release is almost always (16 times out of 17) the most important factor; population factors and distance to well or intake are usually the second most important factor and so on.

This picture of how the Mitre Model works can be simplified even further by just considering the top four parameters in Table 4 and by recognizing that for parameters such as distance to well/population served or distance to stream/population, the population portion of the parameter is a good indicator of this whole factor (of course it is the whole factor for the air pathway) since people require wells or surface water.**

Results are shown in Table 5 for the rule: "Observed release, population greater than 100 and (near) maximum toxicity, persistance, and quantity in any one pathway produces an NPL site--failure to satisfy these conditions does not."

The two sites not satisfying this rule are of particular interest. Alden Mill has the highest score of any non-NPL site, higher in fact than several of the NPL sites, but this is based on "unproven" arsenic content of the waste. This may be why it is an exception to the rule and was not listed. The other NPL site not satisfying the rule is Celtor Chemical. It scores maximum on

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*Numbers may add to more than 17 horizontally, because more than one pathway is considered.

**The population figure used is whatever was mentioned in scoring that pathway at that site.

TABLE 4

SENSITIVITY ANALYSIS FOR 17 NPL SITES

	Parameter Importance				
	1st	2nd	3rd	4th	5th
"Observed release"	16	1	-	2	4
Distance to well or intake/population	-	12	5	1	3
Toxicity, persistence	-	4	11	2	-
Quantity	-	-	1	8	4
Water/land use	-	-	-	3	6
Containment	1	-	-	1	1

toxicity, persistence, quantity and has a population nearby of more than 100, but it is an inferred, rather than an observed, release. It has the second lowest score* of the NPL sites and in fact is lower than the score for Alden Mill. The Celtor Chemical site also scores fairly high on direct contact and is said to be a children's play area on the Hoopa Indian Reservation.**

2.4 Mining Site Characteristics Leading to Listing

In summary the way the Mitre Model treats mining sites can be represented by the equation:

$$\text{MITRE Model Score} = \text{Observed Release Score} \times \text{Quantity, Toxicity, Persistence Score} \times \text{Population Score}$$

As illustrated in Figure 2:

- Mining sites almost automatically receive the maximum quantity, toxicity, persistence score based on total amount of tailings, spoils, slag or discharge and on the presence of small amounts (relative to bulk waste) of metals, etc.
- A mining site which is nominated for the NPL will tend to have a maximum score for an "observed release" in at least one pathway (27 of the 31 did) because only sites that have been previously studied tend to be nominated and any concentration measurement above background (no matter how small) constitutes an observed release.
- With maximum scores in these two areas, the total score will be high enough for listing on the NPL unless there are virtually no people in the area.

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*The lowest scoring NPL site is the Mountain View Mobile Homes asbestos site.

**As noted earlier, according to the National Contingency Plan, direct contact and fire and explosion scores are supposed to be used only to determine if emergency attention is needed. Listing is supposed to be based solely on the migration score.

TABLE 5

PERCENTAGE OF SITES SATISFYING THE SELECTION RULE IN THE TEXT

NPL Sites*	94%	(1 site not an observed release, 16 satisfy the rule)
Non-NPL Sites	6%	(13 sites satisfy the rule, 1 does not)

*One NPL site has next to maximum score for one pathway for the toxicity/persistence parameter. Score in this pathway is based on copper rather than cadmium which was used in the other pathway and which would have produced a maximum score. All the others score the maximum in these categories.

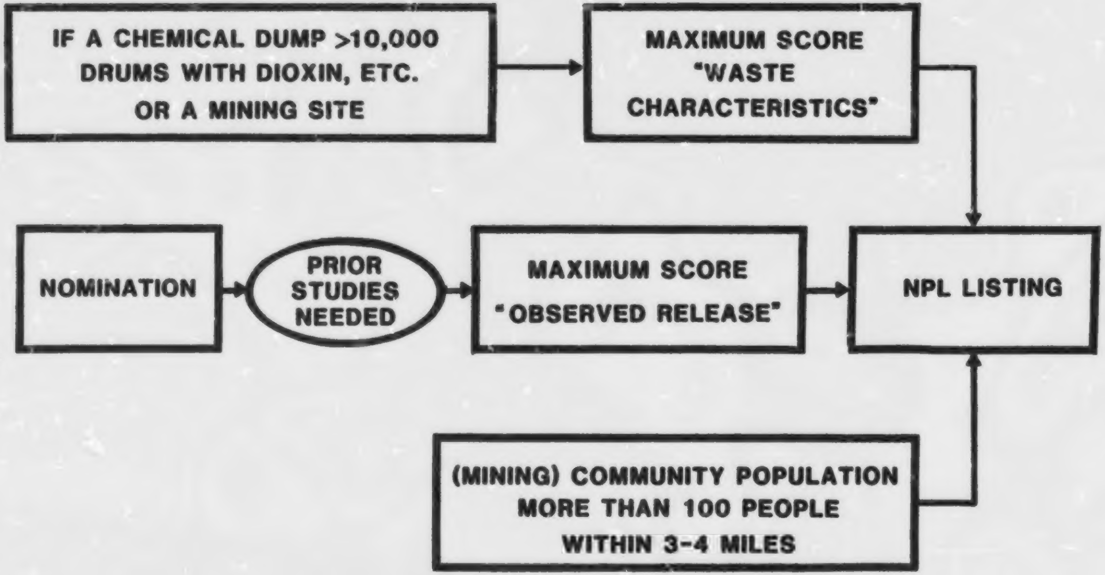
IF A CHEMICAL DUMP >10,000 DRUMS WITH DIOXIN, ETC. OR A MINING SITE
MAXIMUM SCORE "WASTE CHARACTERISTICS"
NOMINATION
PRIOR STUDIES NEEDED
MAXIMUM SCORE "OBSERVED RELEASE"
NPL LISTING
(MINING) COMMUNITY POPULATION MORE THAN 100 PEOPLE WITHIN 3-4 MILES

Figure 2.

NATIONAL PRIORITIES LIST (NPL) OVERVIEW: MITRE MODEL LOGIC

2.5 Why 14 Sites Were Not Listed

Table 6 presents the specific reasons, in terms of the three factors comprising the rule, why the 14 non-NPL sites failed to score high enough for listing. Results are given only for the highest scoring pathway.

Lack of an observed release and little or no population nearby are the most common reasons for low scores. Of the five cases where quantity and toxicity/persistence scores were not (near) maximum, two of the sites were tram sites and the quantity of waste is actually relatively small. At another two of the five sites the toxicity and persistence scores were based on sulfuric acid and cyanide rather than trace metals in the waste. The toxicity/persistence scores for these substances are not maximum, as they are for metals. Had the scorer selected metals, which are invariably present at some low level, maximum toxicity/persistence scores would have been achieved.

TABLE 6

REASONS WHY 14 MINING SITES NOMINATED WERE NOT SELECTED FOR THE NATIONAL PRIORITIES LIST PROPERTIES OF HIGHEST SCORING PATHWAY

SITE NUMBER	NO OBSERVED RELEASE	LESS THAN (NEAR) MAXIMUM QUANTITY AND TOXICITY	POPULATION LESS THAN 100 WITHIN 3-4 MILES	OTHER
18			X	X(1)
19			X	
20			X	
21	X			
22			X	
23	X			
24	X			
25		X	X	
26	X			
27	X	X(2)		
28	X	X(3)		
29	X	X(2)		
30		X(4)		
31	X		X	
TOTAL	8	5	6	1

(1) "Unproven Arsenic Content of Waste," see text.
(2) Tram site
(3) Based on sulfuric acid not metals.
(4) Based on cyanide solution not metals.

3.0 VALIDITY OF THE MITRE MODEL PROBLEM STATEMENT

Assessment of the validity of the Mitre Model problem statements is preliminary since only information which could be immediately obtained was used. Furthermore, no site visits were made as part of the Mitre Model analysis. Nevertheless, for several sites information was obtained at odds with the Mitre Model problem statement.

3.1 Inconsistencies for the 17 NPL Sites

Areas of inconsistency for the most important pathway include:

1. Measurements which indicate concentrations below Federal or State criteria or standards at the location of exposure (6 sites, numbers 1, 3, 5, 8, 15, 16).
2. Drinking water aquifer not penetrated by "observed" release (2 sites: 13, 14).
3. Population upgradient from ground water contamination source (2 sites: 4, 16).

Although the present lack of high concentrations or aquifer contamination does not assure that contamination will not occur in the future, this information as to present conditions is obviously germane to setting priorities. Further, some sites are sufficiently old that if drinking water contamination were possible it probably would have occurred by now.

3.2 Validity of Model Application to Mining

We have concluded that the Mitre Model is not a useful tool for assessing or ranking hazards at mining sites because the score is produced by site characteristics which have little to do with the actual hazards at the site.

After reviewing the 31 sites nominated for the National Priorities List, the authors of this report are convinced that what distinguishes NPL sites from non-NPL sites is not primarily degree of hazard. Rather the distinction is based mainly on how much prior study has been done at a site and how rural the surroundings are. It could be argued that both of these factors correlate to some extent with degree of hazard. This may be true in some instances but such an indirect measure of hazard could be misleading in many circumstances. A direct measure of hazard would require explicit consideration of the concentrations to which people may be exposed.

Further, reviewing the EPA descriptions of the NPL sites furnished at the time of listing, together with the Mitre Model scores for each site, produces a distinct impression of randomness in the model results. Often the Mitre Model identifies the main problem as being something totally different than found in the site description or in prior (and more thorough) studies--a site commonly believed to have surface water impacts is listed because of air impacts, etc.*

As has been noted, special characteristics of mining sites that contribute to high Mitre Model scores are the large amounts of waste involved and the presence of trace metals in the waste. These characteristics tend to produce maximum scores in one of the three scoring areas--ground water, surface water, or air. Thus, scores in the other two areas which are too small to produce listing at a chemical dump may be sufficient to list a mining site.

The Mitre Model seems to have been developed with chemical dumps in mind. In that context its scoring system may be more useful. For example, maximum quantity of waste may indicate more than 10,000 drums of chemical present rather than, as for mining, more than 2,500 tons of spoils, slag, or tailings and whereas maximum toxicity at a chemical dump may indicate presence in concentrated form of very toxic or carcinogenic compounds, mining sites generally contain only the normal elements in the earth at the site.

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*This raises the question as to what extent, if any, Superfund money needs to be spent on items responsible for listing as opposed to other items at a site.

3.3 General Deficiencies in the Mitre Model

Deficiencies in the Mitre Model not specific to mining sites have been raised by a number of commentators, most recently by Congressional Office of Technology Assessment (OTA).* We repeat the gist of their three main points here because they seem particularly appropriate in light of our review of the 17 NPL mining sites:

1. "The score for hazard potential is based on only the most hazardous substance in the site rather than a composite of all constituents. In contrast, all substances are used to quantify the magnitude of this hazard..." (That is quantity is scored on the basis of all substances present).
2. "Low-population areas will tend to receive a lower score than high-population areas using the HRS, making it less likely that CERCLA funds for remedial action would be allocated to sites in these mostly rural areas, without regard to the relative number of persons actually exposed and the nature of the hazard. One major component of the HRS is based on the size of the population served. If 100 or fewer persons are being served by a threatened water source, the score would be less than if a larger number of people were involved. While it is reasonable to expect that those sites near urban centers may present a threat to large numbers of people, this is not always the case....:"
3. "Following a release from a site, however, distance to an exposure point has only marginal significance for the degree of hazard posed. Because of the mobility characteristics of contaminant plumes within ground water aquifers, it is possible that a well located 3 miles from a site could have higher concentrations of hazardous constituents than a well located only 2,000 ft from it. The important factor after constituents have been released to the environment is whether direct evidence of contamination exists at any exposure point...."

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*"Technologies and Management Strategies for Hazardous Waste Control," U.S. Government Printing Office, Washington, D.C. 20402, March, 1983, pg. 383.

Extending the argument of the last point, that concentration measurements at exposure locations are the best evidence of hazard, OTA raises the "general criticism" that no provision exists for incorporating additional technical information about a site beyond what is asked for by the Mitre model. For mining sites it is likely that waste composition and concentration in the environment comprise the two most important categories of additional information. This is because, unlike some chemical wastes, toxic materials in mining wastes are generally present only in very low concentrations.

EPA has already stated (FR 47, 137, 1982) that composition information was not used because they had been unable to develop a consistent approach for both sites where definitive information exists and sites where it does not. Similarly, they took the position that concentration data was frequently unavailable and that it would be unnecessarily expensive and time consuming to require it at each site (as well as noting other difficulties in data collection and interpretation). However, as noted previously, all the mining sites listed had concentration measurements since all had "observed releases" above background. Thus the data is generally available and could be utilized.

Alternatives to the Mitre Model which draw valid comparisons between sites with different kinds of information, particularly waste composition or concentration information, do not presently exist. However, it seems to us, as it apparently did to OTA, that development of a simple methodology to do this should not be an insurmountable task. One way to do this is to permit branches in the scoring logic depending on the answers to questions such as: "Do ambient concentration measurements exist?" or "Can waste composition be estimated for maximum toxicity compounds?" In this way full information about a site could be utilized. Alternatively a different methodology could be developed specifically for mining wastes. The major change from the present form of the Mitre Model should be in the "Waste Characteristics" scoring area to take into account the special character of mining wastes, i.e., large quantities of waste with low concentrations of toxic materials.

4.0 SUMMARY AND CONCLUSIONS

This analysis has examined the process by which mining related sites were nominated and selected for the National Priorities List (NPL) and possible remedial action under Superfund. Principal conclusions of the study are as follows:

1. Since appreciable Mitre Model scores can be developed only for sites with sufficient previous study, only well known sites are nominated for the NPL. This may be true even for sites that have been studied for reasons not scored by the Mitre Model.

2. Sites which have been previously studied and are nominated are likely to have concentration measurements at or near the site above background. (This was true for all of the 17 NPL sites studied in at least one pathway). This automatically gives a site the maximum score in one of the three major scoring areas.

3. Mining sites also are likely to receive a maximum score for waste characteristics, the second major scoring area based on maximum scores for quantity, toxicity, and persistence of waste. Each of the 17 NPL sites scored maximum or next to maximum in these categories. Since toxicity and persistence are scored based on any measurable component, relatively small amounts of metals produce as large a score as would dioxin in a chemical dump. Since quantity is based on total amount of spoils, tailings, slag, or water discharge, the score is a large as for 10,000 drums or more of chemicals in a waste dump.

4. The third and last scoring area relates to the population within 3 or 4 miles. With maximum scores in the two previous areas the total score will be high enough for testing unless there are virtually no people in the area. If there are more than 100 people then, the overall score for a mining site will be large enough for the site to be placed on the proposed NPL. This is not a large population in view of the fact that mining, including smelting and refining, like other economic activity requires a workforce who may reside locally with their families.

5. Because of the preceding facts it is possible to predict, with a high degree of accuracy, whether or not a mining site will be listed by using the rule "observed release, population greater than 100 within 3 or 4 miles, and (near) maximum toxicity, persistence and quantity (in any one pathway) produces listing--failure to satisfy any one of these conditions does not."

6. Mining sites tend to receive maximum scores in one of three major scoring areas because of the quantities of waste involved and the presence of trace metals. Thus, scores in the other two

areas which are too small to produce listing at a chemical dump may be sufficient to list a mining site.

7. Only a preliminary review of the actual situation at the 17 mining sites proposed for the NPL has been possible, however for at least 9 sites there is crucial information which was not used and which provides a totally different perspective. Specifically:

   - concentration measurements below applicable standards

   - evidence that the drinking water aquifer is not penetrated by the observed release

   - ground water flow away from any population

   For some of the remaining 10 sites there may also be information contradicting the Mitre Model analysis but it was not available to us.

8. The Mitre Model is not valid for mining site application. It cannot be. The purpose of the model is to indicate degree of hazard or risk yet for mining sites high scores are produced by factors unrelated to any direct measures of hazard. Again this situation comes about largely because of the "bias" in the Mitre Model against the typical mining waste, i.e., large quantities of waste with the presence of trace metals.

9. Since mining sites may be among the most expensive to fully remediate by removal when there are extensive worked areas or large amounts of tailings, it is important that assessment of true hazards for these sites use all available information. Alternatives to the Mitre Model which incorporate information about waste composition and ambient concentrations are particularly needed for a valid treatment of mining sites.

STATEMENT OF CHARLES EDDY, DIRECTOR OF GOVERNMENT REGULATORY AFFAIRS, TOSCO CORP., ON BEHALF OF AMERICAN INDEPENDENT REFINERS ASSOCIATION, WASHINGTON, DC

The CHAIRMAN. Mr. Eddy.

Mr. EDDY. Thank you, Mr. Chairman.

My name is Charles Eddy. I'm Director of Government and Regulatory Affairs for the Tosco Corp., an independent refining company based in Santa Monica, CA

I'm speaking today on behalf of the American Independent Refiners Association, which supports the reauthorization of Superfund. We understand the need to increase in a significant way the amount of money available to clean up abandoned hazardous waste sites. We are particularly concerned, however, that this be done in a way that reduces the impact on our already struggling sector of the domestic refining industry.

Since 1981, 140 U.S. refineries have been shut down. One hundred and fifteen of these have been independent refiners. This has been due to a number of factors. Many of the plants that shut down have been inefficient, but those of us that are surviving today have invested substantially to produce fuels needed in today's market and to meet today's environmental requirements.

Refining profit margins over the last 2 years have been squeezed by declining wholesale prices for finished products, primarily gasoline, and artificially high crude oil prices. Frequently, in six of the last eight quarters, a barrel of finished product is selling for less than a barrel of crude oil used to refine it.

I give you this background simply to point out that any proposal which threatens to undercut our negative or our already miniscule profit margins is a life-or-death issue for us. And any significant increase in the existing petroleum feedstock tax falls into this category.

We are different than the major integrated refiners, in that unlike the majors, we cannot finance our refining losses out of our crude oil production.

Currently, every barrel of crude oil is assessed a $.79-per-barrel, Superfund petroleum tax at the refinery gate. While this may not seem like much, the working assumption has been historically that this would be passed on to a broad sector of consumers along with other refining costs.

In fact, under today's market conditions, this is virtually impossible. We've been squeezed by low-cost imports, by competition for market share, and by the crude-price, product differential I just described. In effect, the crude, related cost cannot be passed on today; nor do we see an opportunity to do it in the near future.

Last year, this committee and others considered various substantial increases in the crude throughput tax. While we realize that this is not the case in terms of the proposals that are in front of you today, we also recognize that there are many complex issues which you have to deal with in terms of funding Superfund. We urge you not to fall back onto a major increase in a throughput tax or, as was also considered in the House last year, a tax on refinery intermediate streams. These could have had an impact of as much as half a cent a gallon. Again, this may not seem like very much, but in an industry which measures its profits in fractions of a penny a gallon, this could be devastating for us.

In short, we strongly urge you to move the Superfund funding to a broad based tax. A manufacturers' tax, such as that incorporated in S. 957, would recognize this objective. It would also recognize the reality that today's hazardous waste cleanup problems are not the product of two industries—the chemical and the petroleum industry—but of a broad sector of American industry from the corner dry cleaner through to major manufacturing concerns.

I would like to add one additional perspective from the standpoint of my own company on the wet-weight/dry-weight issue, which has been considered so extensively this morning.

We operate primarily in California. California has had a wet-weight tax for 3 years. It has resulted in enormous inequities on industries such as ours which dispose of at times wastewater streams that contain highly dilute concentrations of hazardous waste. The California legislature, a year after it enacted its original bill, had to come back and put in a series of amendments to deal with these inequities. Inequities, in fact, are still there.

We believe that the approach suggested by Senator Bentsen in his legislation of an alternative dry-weight/wet-weight basis, depending on the realities of a particular disposal situation, is a much more workable approach if the committee does decide to go to a waste-end tax.

Thank you, Mr. Chairman.

[The prepared written statement of Mr. Eddy follows:]

Statement of
CHARLES P. EDDY
On Behalf of
THE AMERICAN INDEPENDENT REFINERS ASSOCIATION
Regarding
THE REAUTHORIZATION OF SUPERFUND
Before the
SENATE COMMITTEE ON FINANCE
April 26, 1985

Mr. Chairman and Members of the Committee:

My name is Charles Eddy, and I am the Director of Government and Regulatory Affairs for Tosco Corporation of Santa Monica, California. I am testifying today on behalf of the American Independent Refiners Association (AIRA). AIRA is the only trade organization which speaks exclusively for independent refiners, and it accounts for about one-third of the nation's independent petroleum refining industry. We appreciate this opportunity to present our views to the Committee.

I. SUMMARY OF COMMENTS AND RECOMMENDATIONS

Generally, AIRA members recognize the need for Superfund to pay for the cleanup of abandoned hazardous waste sites and certain petroleum and chemical spills, and we support its reauthorization. However, we are seriously concerned about the potential impact of any significant increase in the current Superfund petroleum feedstock tax.

The Hazardous Substance Response Revenue Act of 1980 (94 Stat. 2797), more commonly known as the Superfund Tax Act ("the Act"), imposed both a tax on crude oil ("petroleum tax," I.R.C. §4611) and a tax on certain organic and inorganic chemicals, including petrochemical feedstocks ("chemical tax," I.R.C. §4661). Currently, every barrel of crude oil received at a U.S. refinery is subject to a .79 cents per barrel petroleum tax.

Various legislative proposals which are pending now or have been considered by either the Senate or the House during the last year would increase the petroleum tax many times. For example, H.R. 5640, which was passed by the House last year, would have increased the tax on petroleum to 7.86 cents per barrel. AIRA members believe that any significant increase in the petroleum feedstock tax would impose a disproportionate and inequitable burden upon independent refiners as compared both to the integrated international oil companies and to American industry generally. Since the independent refining sector already is facing serious financial difficulties, for some AIRA members any significant increase in the petroleum tax burden could be a critical blow.

AIRA recommends (1) that the petroleum tax be maintained at its current level, (2) that the method by which the current petroleum tax is imposed be amended in order to make it more likely that the tax can be passed downstream and (3) that

Congress enact an additional, broadbased tax, such as an excise tax on all manufacturers and producers of tangible personal property, the proceeds of which would be used for an expanded Superfund.

II. INDEPENDENT REFINERS HAVE SERIOUS FINANCIAL PROBLEMS

The independent sector of the petroleum refining industry today provides over one-fourth of the nation's petroleum products. Historically, it has provided important innovations and has served some product markets which are not served by the major integrated oil companies. Independent refiners, which are the primary suppliers of independent marketers and retailers, facilitate competition at the pump by providing consumers with a competitive alternative to the integrated major oil companies.

Today, however, the contributions of the independent refining sector are seriously threatened. In recent years independent refiners, which, by definition, do not have substantial reserves of crude oil, have been facing severe financial difficulties. Many independent refiners have incurred substantial debt in order to upgrade their facilities to meet changing consumer demands and to comply with evolving environmental regulations. Many also are making additional investments to comply with EPA's accelerated lead phasedown. No matter how sophisticated the facilities of independent refiners have become, however, most simply are not earning profits from refining operations.

Independent refiners, like other U.S. refiners, are faced with rapidly increasing imports of gasoline and gasoline blendstocks, negative profit margins in refining operations, increases in export refining capacity offshore (particularly in OPEC countries) and static gasoline demand in the United States. These factors have caused the shutdown of efficient, sophisticated refineries in this nation. Between January 1981 and January 1984, the U.S. refining industry permanently shut down 107 refineries, representing about two million barrels per day of capacity, and idled one million more barrels. Of these refineries, 88 were independent. Since January 1, 1984, an additional one million barrels per day of U.S. refining capacity has been closed down. This included 27 independents, representing nearly 900,000 barrels. We are facing the potential loss of another one million barrels per day in the near-term.

In six of the last eight quarters beginning in 1983, a barrel of refined products has sold in the U.S. market for less than the price of the barrel of crude oil used to make it. This has resulted in negative profit margins for virtually all U.S. refiners, despite the fact that U.S. domestic crude oil posted and spot prices are now among the lowest in the Free World. Over this period, the selling prices of refined product imports into the U.S. market also have failed to recover the posted and spot prices of crude oil in Free World markets. Netback analysis reveals that almost all of the Free World's refiners would have been experiencing negative margins in their operations on this basis. Yet foreign refiners have greatly increased their exports to the U.S. market since 1981, while our refineries have been closing down. Most of this increase was in 1984 and the last two quarters of 1983.

Unlike the major oil companies, independent refiners cannot finance operating losses, or investments to assure compliance with environmental regulations, through reserves of crude oil. Thus, independent refiners which are still in business must recognize that each new proposal or development which threatens to further undercut miniscule or negative margins is a life and death issue. For many AIRA members, any significant increase in the Superfund petroleum feedstock tax would indeed be such an issue.

III. A PETROLEUM TAX INCREASE WOULD BE PARTICULARLY BURDENSOME BECAUSE IT WOULD BE DIFFICULT TO PASS THROUGH

The original Superfund Tax Act was designed to impose the tax burden on petroleum, petrochemical feedstocks and inorganics approximately in proportion to the ratio of hazardous wastes generated from each. The drafters, seeking an equitable fee system with minimal and widely diffused economic impact, sought to tax the relatively few basic building blocks which ultimately result in the generation of hazardous products and wastes. The intent was not to single out any one industry's profits, but rather to create a tax which could be "evenly passed along to all industrial sectors which produce and consume hazardous substances and generate hazardous wastes."

S. Rept. No. 96-848 to accompany S. 1480, at 19-20, 96th Cong. 2d Sess. (1980).

In accordance with the Act's allocation system, the petroleum tax has generated 15 percent of the total fund from the refining industry, reflecting the level of waste originally projected to be generated by that industry. Time has shown that this represents far more than the industry's fair share, since EPA data suggest that refineries are generating less than 15 percent of the nation's hazardous waste.

The impact of the disproportionate tax burden, and the potential impact of a petroleum tax increase, would be less troublesome if the tax were operating as the drafters had expected. Excise taxes, generally, are expected to be passed on downstream to a manufacturer's customers, and Congress specifically intended that the original Superfund tax would be passed on evenly, throughout the economy, so as not to weigh too heavily upon any industry. However, actual experience indicates that the tax burden is not being passed on evenly, and that any increase in the petroleum tax would weigh particularly heavily upon independent refiners because they probably could not pass the increase on downstream.

The current petroleum marketplace conditions--including strong downward price pressures to create market share and inexpensive imported gasoline establishing the marginal price--would make it difficult for independent refiners to pass the additional Superfund crude oil tax through to consumers. And because of their extremely tight margins, for some independent refiners the need to absorb even a fraction of a cent of additional tax could be a fatal blow.

IV. A BROADBASED TAX WOULD BE A FAIRER APPROACH

It has become clear that the total costs of cleaning up the nation's abandoned hazardous waste sites will be astronomical--many times the currently authorized Superfund levels. These problem sites are attributable not primarily to current practices of two major industries, but to the past practices of virtually every segment of American business, from the corner dry cleaner to the largest industrial plants. AIRA's members do not object to payment of the petroleum tax at its current level. However, a tax distributed across a broad cross-section of American industry should be considered seriously by the Congress as an alternative to any increase in the current feedstock taxes.

Among the broadbased tax approaches which AIRA's members believe are worthy of careful consideration is a manufacturers tax such as that incorporated in S. 957, recently introduced by Senators Bentsen and Wallop. Such a tax, which would be imposed at a very low level on sales of all manufactured goods and raw materials, would reflect the fact that hazardous wastes, and the economic benefits related to past disposal practices, are associated with the activities of the entire manufacturing sector. The tax could be levied at such a low rate that it would impose a disproportionate burden on no particular industries, and it could be structured in such a way as to not place domestic goods at a disadvantage compared to foreign goods.

The S. 957 manufacturers tax is only one of the pending options for broadening the tax base. If additional time is needed for evaluation of these various proposals, particularly in light of the need to also increase general revenues, AIRA's members urge that the current tax scheme simply be reauthorized for some brief period. There is a danger that the apparent simplicity of a substantial feedstock tax increase could make it appear unduly attractive. It is critical that adequate time be spent to assure that an expanded Superfund does not result in a crippling tax blow to any single industrial sector.

V. AN ALTERED COLLECTION METHOD COULD FACILITATE FEEDSTOCK TAX PASSTHROUGH

Whatever the tax level, the system for collecting any petroleum feedstock tax should be modified to facilitate maximum passthrough to ultimate downstream purchasers. Industry history suggests that petroleum taxes are more likely to be passed through to downstream customers if the taxes are levied upon refined petroleum products, with liability resting with first purchasers, instead of being imposed upon refinery feedstocks, as is the case with the current petroleum tax. One way to modify current feedstock tax to encourage passthrough would be to collect the tax by increasing and broadening the existing excise tax on motor fuels.

VI. ANY PROPOSAL TO IMPOSE A BTX TAX SHOULD BE REJECTED

In the refining process, the lighter and more active benzene, toluene and xylene often are separated from the refined streams as reformates and reblended into gasoline during the final stages of production in order to achieve desired octane levels. In 1983, the Internal Revenue Service proposed regulations which would have treated these partially processed hydrocarbon streams as "taxable chemicals" even though they ultimately leave the refinery gate as gasoline components and not as petrochemical feedstocks (48 Fed. Reg. 48839, October 21, 1983).

However, those regulations were not put into effect, and a provision in the Deficit Reduction Act of 1984 amended the Act to clarify that such an imposition of the chemical tax upon interim refinery streams would be inconsistent with the intent of Congress. In enacting that clarification, Congress refused to alter significantly the tax balance and declined to permit the Superfund feedstock tax burden to be shifted away from the chemical industry to the petroleum industry. S. Rept. No. 98-169, Vol. I, at 760, 761, 98 Cong. 2d Sess. (April 2, 1984).

Under various legislative proposals which were introduced last year, however, Congress would have reversed itself. Various bills would have applied the chemical tax to streams of benzene, toluene and xylene which are blended into gasoline ("BTX tax"). The impact of a BTX tax would be to greatly magnify the disproportionate tax burden upon refiners, and particularly upon independent and other domestic refiners.

Although it appears that Congress has rejected the BTX tax, AIRA members are sufficiently concerned about the impact of such a tax that we wish to briefly address the problems which would be raised if the approach were once again considered.

If a BTX tax were enacted, the burden of funding would be drastically distorted. The refining industry could be called upon to contribute several times that 15 percent, which, in itself, represents an expansive measure of the industry's fair and proper share of the cost of cleaning up hazardous wastes.

The BTX tax not only would disproportionately burden the refining industry, but also could result in varying economic impacts and substantial competitive problems among various sectors within the industry. One critical problem is that, at a time when domestic refiners are struggling to meet the growing competition from foreign, often government-owned refiners, the BTX tax would act as a subsidy for imports of petroleum products. This is because, although importers would continue to pay the petroleum tax, the finished product they import would not be subject to the chemical tax imposed on interim streams. The BTX tax would result in a substantial incremental tax on domestic gasoline only. This tax differential, during a period when margins are extremely tight or negative, could further undercut the competitive position of many domestic companies.

Another inequitable aspect of a BTX tax would be that its level would vary significantly from company to company, according to a variety of factors with little relationship to the hazardous waste ultimately to be generated. Various refineries produce and blend varying combinations of interim streams, depending upon their feedstocks, their desired product slates and the nature of their facilities. Finally, because operations which produce and use BTX vary from day to day and facility to facility, the BTX tax also would not achieve the goal of ease of administration. It would not be simple to measure and record varying BTX levels, nor to compute, report and audit the BTX tax. A probable result would be uneven application of the tax and substantial controversy.

VII. THE SUPERFUND TAX ISSUE IS CRITICAL TO INDEPENDENT REFINERS

Many in the independent refining sector regard the equitable resolution of the Superfund tax issue as a matter important to their very survival. A reauthorization of Superfund without full consideration of the equities involved and a reassessment of the tax basis would be a mistake which some U.S. independent refiners may not be able to survive.

The CHAIRMAN. Dr. Forney, if we were to have a waste-end tax, how much do you think your industry would pay? What percentage of it?

Dr. FORNEY. If there were a waste-end tax at the approximately $300 million level that we have recommended, we believe that our industry would pay somewhere between 40 and 60 percent of it. Say half.

The CHAIRMAN. Second question. Let's assume we were to go to the levels suggested by the Senate Environment and Public Works Committee, $7.5 billion. Would you still suggest a waste-end tax and some kind of a broad-based tax or should we have just a broad-based tax? I'm assuming we are going to keep the feedstocks tax roughly where it is. Would you recommend going to three taxes or just two?

Dr. FORNEY. Senator, it's always very easy to take the "tax that fellow behind the tree" attitude in something like this. But our industry, I think, has been fairly up front on this right from the start. We are prepared to pay our part of this thing. So it would be our recommendation that there be a feedstock tax at the present level, a dry-weight, waste-end tax, and then whatever was needed beyond that that could not be gotten from general revenues and from cost recovery should be handled by the broad-based tax.

The CHAIRMAN. Thank you. That was a very clear answer. I appreciate it.

Senator Chafee.

Senator **Chafee**. No questions.

The **Chairman**. Senator Mitchell.

Senator **Mitchell**. Thank you.

Mr. Paul, in your written statement—and I believe you may have mentioned it orally—you said there are good reasons to believe that the industry's—and they are referring to your industry, I assume—contribution to alleged Superfund problems have been significantly exaggerated by the bias against mining-related sites inherent in EPA's hazardous ranking system.

Did you write that after the Environment Committee acted? Are you aware of the action taken in that committee to address that problem?

Mr. **Paul**. The Mitre Model system?

Senator **Mitchell**. Yes.

Mr. **Paul**. We——

Senator **Mitchell**. Let me just refer you to the committee report, which is dated February 18, which in a new section 105(c) requires the President not later than 12 months after the date of enactment of these amendments to promulgate amendments to the hazardous ranking system. The purpose is to assure to the maximum extent feasible that the hazard ranking system accurately assesses the relative degree of risk to human health and environment posed by sites and facilities subject to review.

That was done, I was under the impression, to accommodate the concerns you have expressed. And I guess what I'm asking you now is that, from your standpoint, inadequate? You don't want that done?

Mr. **Paul**. No, no. We do want it done. The only point we are making is that the mining industry has been at loggerheads with the EPA for some time over this issue because of the nature of our waste being very high in volume but low in toxicity and not being considered that way in the past. And this simply is a statement—that lack of consideration would be very dangerous for us. That's one of the reasons why we are very concerned about the waste-end tax. Because of the fact that we do have very high volumes, but very low toxicity, and yet by court decisions and in interpretations of EPA and the Bevill amendment determinations, which will be coming down, we can see the time when these very high volumes could be dragged in and it would disastrous for us.

Senator **Mitchell**. But from your standpoint this is a desirable way to proceed.

Mr. **Paul**. Yes.

Senator **Mitchell**. Now you said that you are opposed to a waste-end tax.

Mr. **Paul**. For the reasons I just stated. Yes, sir.

Senator **Mitchell**. Right. In any form.

Mr. **Paul**. In any form. We don't think it provides an adequate and fair base—and I think you've heard a lot of testimony from people who are much more directly affected today that there are serious questions about the adequacy of the revenue; there are questions about the fairness of it. We are concerned about the expansion of it to include such things as these very high volume, low toxicity wastes. We think a waste-end tax doesn't provide the kind of things that we need as far as an international business because you are not going to be able to provide a mechanism that will equitably treat imports versus the cost that we domestic producers will have to absorb. For those reasons and several others which I think we go into in more detail in our written statement, yes, sir, we are opposed to it.

Senator **Mitchell**. Right. Thank you.

The **Chairman**. Senator Wallop.

Senator **Wallop**. Mr. Chairman, I would make an observation on the eve of our budget battle that I do not know where we would find general revenues for any adventuresome funding mechanism in all of this.

I think one observation that I would like to make—and I would like Mr. Anthony to respond as well—is that the Bentsen-Wallop proposal would seem from the perspective of most waste producers to be the simplest and—do you do any exporting at all?

Mr. **Anthony**. Yes. About 10 percent of our business currently is export. And that has declined over the last few years.

Senator **Wallop**. One of the reasons why—and I think it was Dr. Forney that made the original statement—is that it takes care of one of the problems. That it's easy to rebate on export and easy to assess on imports. Would that be of news to your small business?

Mr. **Anthony**. I think generally speaking not only with our small businesses but with most small businesses we are not really versed in the complexity of these details in the various acts. And so that what we call specialized provisions are often overlooked by small businesses just because of the lack of a staff to be fully knowledgeable in all these regulations.

Senator **Wallop**. It would appear to be worth taking a look at from the perspective of all of you because I think that that is, given the general state. of the mining industry, the general state of the chemical industry, the refining industry and organic chemical industry—it just seems to me that one new thing you don't need is a less competitive position abroad and a less competitive position with imports. That would be the only comment that I would have.

I just do not believe that it's useful to think about general revenues at this moment in time. I don't know where they would come from in a budget battle of the type of which we are trying to launch. I don't know if we would get launched.

The **Chairman**. This is not the season for increasing general revenue expenditures.

Senator **Wallop**. No, certainly not. Thank you, Mr. Chairman.

The **Chairman**. Senator Roth.

Senator **Roth**. I totally agree with Senator Wallop on the general revenues. We no longer have any revenues to share. So I think whatever we decide on the level of funding will have to be raised by the new legislation.

Dr. Forney, I would like, if I may, to ask you a couple of questions. I was concerned a few days when someone came up to me—we were discussing Superfunds—and this particular Senator indicated to me, well, he didn't see any problem with the chemical, petrochemical, industry. That it was prosperous and there is no reason they shouldn't pay the bill. That they can easily absorb it or pass it off to the consumer.

Now as I understand your testimony today, that is contrary to the fact. The bloom off of the petrochemical industry no longer exists. As a matter of fact, as I understand, you are entering a very difficult competitive period. Is that true with both respect to exports and the American market?

Dr. **Forney**. I'd answer that in a couple of ways, Senator. At the time the Superfund bill was passed originally in 1980 and as we went into 1981, there were a number of us that had the concept that the Superfund taxes would be passed on through the chain. And as a matter of fact, some of the invoices we got in those very early years had a separate line on it that said Superfund tax and here it is.

We very, very quickly found out that that was not the real world. The real world was the materials coming in from abroad that just rendered completely inoperative the whole concept of passing on that Superfund tax. And so the concept of raising the Superfund tax or contemplating raising the Superfund tax just renders even more difficult the situation which has been very, very bad for this industry in the last few years. You've heard testimony here earlier today that Superfund taxes alone are not responsible for the poor health of the petrochemical industry. That is true. The petrochemical industry is badly depressed as a result of other factors—the strength of the dollar and the building of facilities in Saudi Arabia and Canada and Mexico and so on. But nonetheless, it is the straw on the camel's back.

We do have a number of petrochemical facilities in this country that are worth saving. They can be world competitive in cost. We don't want to do anything with Superfund that will render them less competitive opposite their foreign competition.

We face the foreign competition three ways. We face it in this country as they send things in here. We face it in their countries as we export there. And we face it in third countries—Latin America and in the Far East. We face them in all three places.

Senator **Roth**. Can you comment on the effect upon employment in this country? What has happened in recent years within this industry and what do you anticipate will happen with respect to jobs?

Dr. **Forney**. The chemical industry as a whole is losing employment. It's forcing itself, in some cases, in constructive fashion to become more efficient to meet the exigencies of the stronger dollar that we are dealing with.

The petrochemical industry has lost several tens of thousands of jobs during the period of time that Superfund was in effect. And the downstream industries, several times that many.

What is at stake here within the petrochemical industry itself, just the primary petrochemical industry, is something in the neighborhood of 100,000 to 150,000 jobs. The downstream jobs that are at stake are several times that.

Senator **Roth**. One final question, Mr. Chairman.

Now it's my understanding that the chemical industry did have some serious problems with the administration's waste-end tax-treated wastewater due to the high rate of tax. Now the current proposal of the administration is that tax has been reduced. Does that take care of your problem?

Dr. **Forney**. Senator, it improves the situation a great deal but it does not solve it.

The administration proposal that was presented here yesterday basically would intend to raise $600 million a year from a waste-end tax. When you get right down to it, what they are attempting to raise from the toxic waste themselves are about $300 million, the same as the CMA proposal, and a proposal very similar to that made by Senators Bentsen and Moynihan.

The other $300 million is from water. And I submit to you that it is not environmentally sound or economically sound to attempt to tax water as a means of raising funds for Superfund. We have no objection whatever to taxing and to taxing actually at above the administration rate the toxic component of the water. But the thing I ask you to do is to not put us in a position where we are attempting to manipulate the operation of our facilities—our deep wells and our wastewater treatment plants—in order to get the optimum tax situation. We ought to do it in order to get the optimum environmental situation.

Senator **Roth**. Thank you very much, Dr. Forney.

The **Chairman**. Senator Mitchell.

Senator **Mitchell**. Mr. Chairman, I was not going to get into this line of questioning but in view of the comments made by Senator Roth and Dr. Forney, whom I've met and we've had many discussions on this, I would like to ask him to comment on a report by EPA which appears at least in part to be inconsistent with the thrust of the questioning and answers that you have had. You are familiar with it, I know, Dr. Forney.

That is the question of the impact of the current tax on the industry, and then separately the relative state of the industry. Now although chemical trade surpluses did occur between 1981 and 1983 according to the EPA study, and I now quote from the EPA study:

> This reduction was small relative to the overall deterioration in U.S. trade balance. More important, the U.S. has not lost market share in world chemical exports since the enactment of CERCLA. The U.S. has historically maintained a substantial surplus in chemical trade that amounted to a record $12.1 billion in 1980 and then has declined gradually each year to $9 billion in 1983. Despite this recent reduction, the U.S. share of world chemical exports in 1983 was 17 percent, the highest in more than 10 years.

Now I wonder if you would first say whether or not these figures in this EPA study are inaccurate or accurate. And after that, if you would care to comment on them.

Dr. **Forney**. I can't speak to their accuracy because I haven't derived them myself. But I do not necessarily disagree with them.

The basic distinction that must be made here is between the petrochemical part of the chemical industry and the remaining part. The chemical industry as a whole is not crying poor mouth. We have done a lot of things in investments research and product and process improvements over the years that have made our industry by and large a very, very competitive one. And we intend to compete throughout the world with our products.

The depressed sector, and the one that is most affected by Superfund, is this petrochemical sector. I believe if the EPA had extended their analysis to look not only at the loss in balance of trade of the total chemical business but the loss in balance of trade of the petrochemical sector and what that had done to the total percentage of U.S. participation in exports of petrochemically derived material, I believe they might have reached a different opinion.

Senator **Mitchell.** Well, I would appreciate it if you would look at that report and tell us afterward and in writing whether the statements made in the EPA study are correct or incorrect.

[The information from Dr. Forney follows:]

VP-10820 REV 10-81

DU PONT

E. I. DU PONT DE NEMOURS & COMPANY

WILMINGTON, DELAWARE 19898

EXECUTIVE VICE PRESIDENT

CC: Members of Senate
Finance Committee

May 6, 1985

The Honorable George J. Mitchell
United States Senate
364 Russell Senate Office Building
Washington, D.C. 20510

Dear Senator Mitchell:

I appreciated the opportunity to testify before the Finance Committee April 26 on behalf of the Chemical Manufacturers Association. During my testimony you referred to a recent EPA study which showed an increase in U.S. share of worldwide chemical exports and asked whether this trend was consistent with our position that CERCLA taxes harm U.S. exports. I would like to expand on the information provided to you at the hearing on this question.

Data in EPA's recent 301 report on CERCLA showed that between 1980 and 1983, U.S. exports increased from 15% to 17% of world chemical exports. This is not disputed. Data on which the EPA analysis was based indicate that world chemical trade declined 13% during the 1980-1983 period, while U.S. exports declined 5%; thus, the U.S. share of world exports increased. However, as shown in the report, the relatively strong U.S. performance was largely attributable to strong gains in products such as radioactive materials, medicinals and pharmaceuticals, and pesticides and disinfectants. These are generally high value added products and thus are less apt to be affected by Superfund feedstock taxes.

Significantly, while U.S. exports declined only modestly from 1980 to 1983, the 301 report shows that U.S. imports of chemicals increased over 25% in the same period, reflecting the strengthening dollar and the attraction of an expanding U.S. market. The increases were distributed broadly over the industry's segments including petrochemical-derived materials, which showed a 70% increase in plastics and resins and a 37% increase for organic chemicals. The net effect of a small loss in export sales and a large increase in imports has been the major reduction in the industry's positive balance of trade I mentioned in my testimony. The EPA 301 report projects that this trend will continue.

A slightly different set of trade data from the Department of Commerce, which includes 1984 data (not in the EPA 301 study), shows even more clearly that petrochemicals are suffering more than the chemical industry as a whole from international competition.

	Chemical Industry		Petrochemical	
	% Change 1980 vs.		% Change 1980 vs.	
	1983	1984	1983	1984
Exports	-7	+7	-14	-3
Imports	+31	+69	+52	+107
Balance of trade	-26	-24	-35	-39

Although petrochemical exports in these data have declined only moderately, this performance has been achieved by meeting foreign competition on a price basis. The competitive situation has depressed profits severely and makes impossible the passing on of CERCLA taxes. The recently completed Price Waterhouse study of the pretax earnings of CERLCA-taxed petrochemicals conclusively demonstrates the lack of profitability of these products (see pp. 10 and 11 of my written statement).

We believe, therefore, that trends in world chemical trade, particularly in petrochemicals, are fully supportive of our position that CERCLA feedstock taxes should not be increased.

You also inquired about the inability to pay higher feedstock taxes in the context of profitability statistics of American corporations such as Du Pont opposite federal income taxes paid. The point to be emphasized in this regard is that the continuation and evaluation of any business within any company is based on the performance of that individual business. Consequently, overall corporate profitability and federal income tax payments are not pertinent to the issue of taxes on feedstock businesses.

I would be pleased if the hearing record could be supplemented to reflect the data outlined above. Please let me know if we can provide additional information.

Sincerely,

R. C. Forney

RCF:mjb

E. I. du Pont de Nemours & Company
Wilmington, Delaware 19898

EXECUTIVE VICE PRESIDENT

cc: Members of Senate Finance
Committee

May 15, 1985

The Honorable George J. Mitchell
United States Senate
364 Russell Senate Office Building
Washington, D.C. 20510

Dear Senator Mitchell:

During my testimony before the Finance Committee on April 26 on behalf of CMA, you cited a recent study by the Citizens for Tax Justice (CTJ) which asserted that Du Pont paid no Federal income taxes between 1981-1983. You asked why, in view of this, Du Pont could not withstand increased CERCLA taxes. I would like to respond to your question.

Du Pont did pay a Federal corporate income tax in each of the years 1981-83 as shown by the following amounts from our tax returns:

1981	1982	1983
$35 million	$31.4 million	$58.7 million

During 1981-83, Du Pont's total United States tax payments (Federal, state and local), including the Federal income tax payments above, were very substantial as shown below:

1981	1982	1983
$0.8 billion	$1.0 billion	$1.1 billion

These tax payments include Federal, state and local income taxes, payroll taxes, property taxes, the "windfall profits" tax, the CERCLA tax and U.S. and state gasoline and oil taxes.

Total worldwide tax payments for these years were:

1981	1982	1983
$2.1 billion	$4.1 billion	$4.4 billion

With regard to 1984, we estimate that Du Pont will pay about $120 million in Federal income taxes, that total U.S. payments will amount to about $1.2 billion and that the worldwide figure will be about $4.5 billion.

By focusing on Federal income taxes alone, the CTJ Study provides a highly distorted picture of true tax burden. As shown above, Du Pont pays substantial taxes in the United States and our worldwide taxes are very high. For income tax alone from 1981-1984, the Company's worldwide effective tax rate ranges from 50% to 68%.

Beyond this, for a significant period during the three years in the CTJ Study, including all of 1982, the economy was in severe recession and domestic profits were abnormally low. U.S. income taxes were, therefore, relatively low for these years. Nevertheless, Du Pont continued to invest heavily in plants and equipment and research and development in the United States. This gave rise to significant tax credits which Congress has made available to encourage such activities, thus further reducing Federal income taxes. In 1982, a year of extreme recession and very low domestic earnings, Du Pont invested about $2.5 billion in plants and equipment and over $800 million in research and development in the United States. The tax credits generated by these investments exceeded Du Pont's Federal income tax on its low domestic earnings. Accordingly, these credits were "carried back" to previous years, thus generating a refund of $231 million, a portion of the Federal income taxes Du Pont had paid in those years.

With improved economic conditions, Du Pont's Federal income taxes have increased as shown above. The most telling point, however, is our total tax burden including income and other taxes. During 1981-84, Du Pont has realized about $4.8 billion in after-tax profits while our total taxes over this period have amounted to about $15 billion.

This discussion of tax burden on Du Pont overall has little relevance to the CERCLA feedstock tax, however. The feedstock tax is largely paid by the U.S. primary petrochemical industry. This sector has virtually no earnings on which to pay income tax. Increasing the feedstock tax would only worsen this problem. And as I stated in my testimony, each product or group of products must be self-sustaining. Thus, whatever the profitability or effective tax rates of the chemical business as a whole, companies such as Du Pont cannot shift the effects of losses in petrochemicals to healthier businesses.

I would be pleased if the hearing record could be supplemented to reflect the data outlined above. Please let me know if we can provide additional information.

Sincerely,

R. C. Forney

Senator MITCHELL. Second, with respect to the financial condition of the industry that's affected—as you know, Dr. Forney, there are 12 companies which have paid approximately 70 percent of the feedstock taxes under the 1980 law. I have before me a table showing the Federal-corporate income taxes paid by those 12 companies in the 3-year period—1981 to 1983—and it indicates quite substantial profits and in most cases, very low or negative taxes paid.

Your company, for example, in the period 1981 through 1983 recorded profits of, if I am reading this correctly, $2,591,000,000.00, and paid no Federal income taxes. Indeed, it received a refund of $132,000,000.00 for a Federal income tax rate of minus 5.1 percent. I might add there are others that received proportionately substantially larger refunds. But the effective rate overall paid for the 12 companies was extremely low on profits which were in many cases substantial.

Is that consistent with the comments made regarding the condition of the industry as a result of the Superfund tax?

Dr. FORNEY. Senator, again we are talking about companies that are involved in many, many businesses other than petrochemicals. That includes my own and virtually all of those that are on the list that you described.

The petrochemical part of their business, which is the part that is taxed here, is depressed, very badly depressed. It's paying no taxes because it has no earnings. The other parts of the business, as I have said before, are not crying poor-mouth. The chemical industry is a moderately healthy industry, but we cannot compete in the petrochemical business against companies that are operating on a nonlevel plane versus us and able to ship their materials in here without having been subjected to the Superfund taxes.

Senator MITCHELL. I guess my time is up.

The CHAIRMAN. Go ahead. Neither Senator Roth nor I have any other questions, so why don't you finish up.

Senator MITCHELL. Well, I want to say that I have been deeply involved in this, as you know, Dr. Forney. We have met on occasions previously. And I believe that every single member, not only of this committee and the Environment Committee but of the Senate, wants very much to do what is right, and does not want to impose any inappropriate burden upon a domestic industry, particularly one of the importance of yours.

And the problem is that it is very difficult in the view of the conflicting evidence to determine what is or is not an appropriate burden. I completely respect your position and that is you want the least possible burden on your industry. So does everyone else who comes here. And for all of us, the definition of the public interest is defined through the prism of our own personal interest. And I don't for a minute question you.

We, however, must attempt to make an independent judgment. We must attempt to define the public interest in a broader way trying to evaluate what the different advantages and disadvantages are. And it is a difficult thing to do in light of this conflicting evidence. We will do our best. And I recognize the point that you are making, but there is evidence, obviously, to the contrary and we will have to take that into account.

Dr. **Forney**. Well, you must, indeed, make a judgment of that kind, Senator, but I would submit that if the Superfund bill were reauthorized at the administration level of just over a billion dollars a year and one were to say there were no general revenues, and one were to discount the idea of cost recovery, which I think would be a terrible mistake, but if one were to do that and to say that one were going to have a bill of 300 feedstock, 300 waste-end and the remaining from a broad based tax of the type that Senators Bentsen and Wallop described, the chemical industry would still end up paying about half of those funds.

There is no "tax that fellow behind the tree" to a complete extent in what we are recommending.

Senator **Mitchell**. I'm well aware of that. And as you know, Senator Chafee and I have submitted a proposal which calls for a broad based tax that would extend far beyond the industry. And while it may not be the preferred broad based tax from your industry's standpoint, it is, I'm certain, preferable to other alternatives.

But it really is a little distressing when you say the chemical industry isn't paying taxes because it's not making profits, but according to these figures it isn't paying taxes even when it is making profits.

Dr. **Forney**. The petrochemical industry is not paying taxes because it's not making——

The **Chairman**. As distinguished from the chemical industry, is what you are saying.

Dr. **Forney**. Yes.

Senator **Roth**. Mr. Chairman, I think that's a point that has to be underscored. Dr. Forney, if I understand your testimony, you in no way stated that the chemical industry as a whole was not doing reasonably well.

Dr. **Forney**. That is correct.

Senator **Roth**. It seems to me what's incumbent on Congress and one of our major mistakes in the past is that we like to generalize without looking at the specifics. And what you are talking about is one part of the chemical industry, the petrochemical industry. One of the reasons for your competitive problem, as I understand it, is because of the low cost of gas and oil in the Middle East and elsewhere which gives the competition a great competitive advantage.

In any event, just let me say for one that you have one problem about maybe many large companies with profits not paying any taxes. But that's not the purpose of the Superfund. The purpose of the Superfund is to deal with a specific problem. And I join my colleague from Maine in saying that we must have adequate funds and it must be, I think, be funded by specific taxes and not from general revenue. But it would be a serious mistake in my judgment not to look at the plight of the specific industry which I think there is considerable evidence to show is no longer in a position to pass it on.

I would urge the Chemical Association to supply further information to distinguish between the plight of the specific petrochemical industry and the general industry as a whole.

Dr. **Forney**. We would be very glad to do that, Senator.

[The information from Dr. Forney follows:]

DU PONT

E. I. DU PONT DE NEMOURS & COMPANY
WILMINGTON, DELAWARE 19898

EXECUTIVE VICE PRESIDENT

cc: Members of Senate Finance
Committee

May 2, 1985

The Honorable William V. Roth, Jr.
United States Senate
104 Hart Senate Office Building
Washington, D.C. 20510

Dear Senator Roth:

I appreciated the opportunity to testify before the Finance Committee last Friday on behalf of the Chemical Manufacturers Association. During my testimony, you requested that information be provided to the Committee which would demonstrate the distressed condition of the petrochemical sector of the chemical industry even though, overall, the industry is doing reasonably well.

Considerable information on this issue is presented on pages 7-10 of my written testimony. In addition, the attached statement specifically demonstrates the serious plight of the taxed petrochemical feedstocks. Earnings for these products, which were reasonably good in 1981, the first year of Superfund, plunged to a significantly negative position in 1982 and 1983. Although we do not have industry-wide data for 1984, there is no doubt that this trend continued and the industry at mid-'85 is very depressed.

I would again like to make the point that in this nation's economy, each product or group of products must be self-sustaining. Those that are not must be discontinued. It cannot be reasonably expected that any well managed business can permit an unprofitable product to reduce the overall competitiveness of the organization. Thus, even though many of the companies that pay the petrochemical tax may achieve a reasonable rate of return on other businesses, it cannot be reasonably expected that such companies can shift the effects of the losses in petrochemicals to more healthy businesses.

Sincerely,

R. C. Forney

R. C. Forney

RCF:pb
Attachment

THE CHEMICAL INDUSTRY CANNOT AFFORD AN INCREASE IN THE CURRENT SUPERFUND (CERCLA) FEEDSTOCK TAX

CMA favors the reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), but is of the opinion that the current targeted feedstock fee of $307 million per year must not be increased. A very few manufacturers pay the vast majority of the feedstock tax which is collected on 11 petrochemicals, 31 inorganic chemicals, and petroleum. The petrochemical industry, which pays 65 percent of the total feedstock taxes, is beset by worldwide overcapacity and intense foreign competition. In recent years, these pressures have very adversely affected the earnings of this sector.

In order to quantify the declining earnings of CERCLA-taxed feedstocks, CMA recently requested Price Waterhouse to survey 26 chemical manufacturers of those feedstocks. The purpose of the survey was to measure the earnings from 1981 to 1983 of the taxed petrochemicals and inorganic feedstocks. The earnings for these sectors were then compared with the overall earnings from sales of all chemicals for those companies. The 26 companies were selected because, based on their published capacities to produce the 42 taxed feedstocks, they pay the vast majority of CERCLA taxes. The nine major taxed petrochemical feedstocks and all 31 inorganic feedstocks are included in the survey.

The data for petrochemicals demonstrate that increased feedstock taxes would severely damage this segment of the industry. The attached chart (Exhibit 1) shows that the operating profits of this sector have declined significantly since CERCLA taxes were first collected in 1981. In fact, the earnings of the nine major petrochemical feedstocks in both 1982 and 1983 were negative after paying CERCLA taxes. Those respective losses were $187 million and $100 million. This finding supports CMA's assertion that an increase in the current level of feedstock taxes ($307 million per year) could not be borne by this sector. Earnings for the inorganic chemicals sector subject to CERCLA taxes have also been steadily declining since 1981 (Exhibit 2).

While overall profits for the entire industry are better than for petrochemicals, these profits cannot be used to support petrochemical feedstock taxes. Individual chemical products must be self-supporting and cannot rely on profitability from other products. If a product or group of products consistently shows financial losses, any company will be forced to eliminate those operations. The result in this instance would be the closing of petrochemical plants resulting in a loss of jobs and a shrinking CERCLA tax base which will, in turn, lead to less, not more, income for Superfund.

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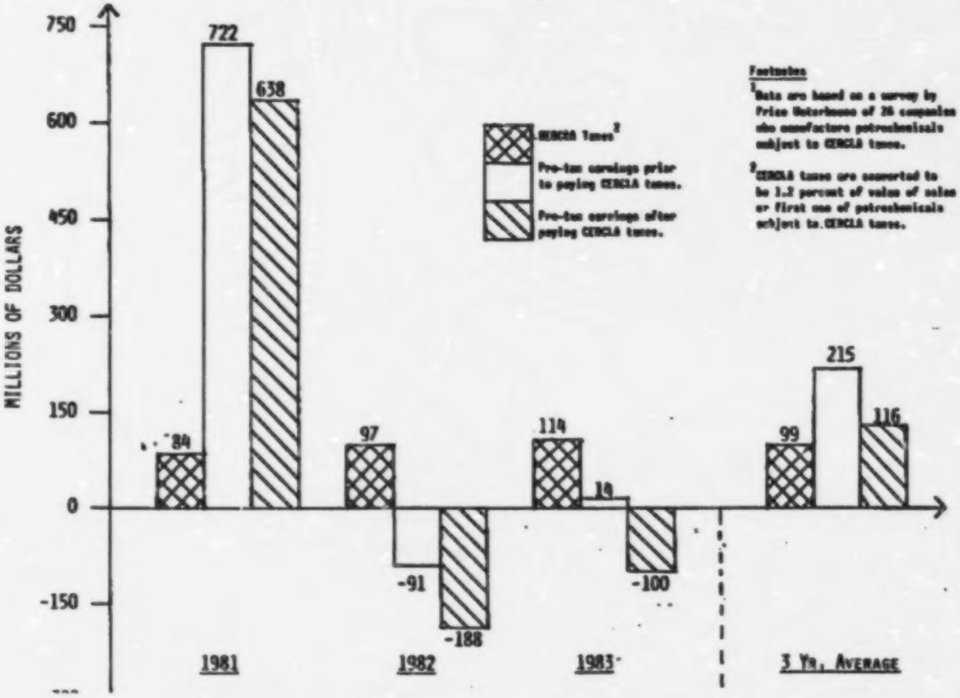
EXHIBIT 1

THE EFFECT ON PRE-TAX EARNINGS ON PETROCHEMICAL FEEDSTOCKS SUBJECT TO CERCLA TAXES[1]



Footnotes

[1] Data are based on a survey by Price Waterhouse of 26 companies who manufacture petrochemicals subject to CERCLA taxes.

[2] CERCLA taxes are assumed to be 1.2 percent of value of sales or first use of petrochemicals subject to CERCLA taxes.

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EXHIBIT 2

A Comparison of Earnings to Sales Ratios of Chemical Companies
for
Their Overall Chemical Sales and Sales of Products Subject to CERCLA Taxes

	1981 Pre-tax Earnings[3] (mil $)	1981 Chemical Sales (mil $)	1982 Pre-tax Earnings[3] (mil $)	1982 Chemical Sales (mil $)	1983 Pre-tax Earnings[3] (mil $)	1983 Chemical Sales (mil $)
Overall Chemical Sales[1] (Chemical & Engineering News)	6038	82365	2306	72138	4418	73725
Earnings to sales ratio (%)	7.33		3.30		5.99	
Petrochemical sales subject[2] to CERCLA taxes	722	8649	-91	8011	14	9194
Earnings to sales ratio (%)	8.35		-1.14		0.15	
Inorganic chemical sales subject[2] to CERCLA taxes	415	3094	227	3297	220	3214
Earnings to sales ratio (%)	13.42		6.89		6.85	

NOTE: [1] Overall chemical sales are total chemical sales for the 26 companies who responded to a CMA survey conducted by Price Waterhouse & Company as reported by Chemical & Engineering News, June 11, 1984. The companies were selected because of their large volume of production of products subject to CERCLA tax.

[2] Sales and earnings data are totals of the 26 companies responding to the CMA survey.

[3] Prior to CERCLA tax

The CHAIRMAN. Any further questions?

Senator MITCHELL. No, Mr. Chairman.

Gentlemen, thank you very much.

The CHAIRMAN. Gentlemen, thank you very much. It was a most helpful panel.

Now we will conclude with a panel of Donald Pirkle, Robert Malone, Richard Bauer, Edward Taylor, John Vidmar, and Edward Merrigan.

We'll wait just a minute, gentlemen, until the room clears out.

Gentlemen, as you are aware, this panel has been limited to 3 minutes apiece so that we can get more of you on. Every one of you represents a very legitimate and specific interest here as opposed to some of the more generic testimony you've heard. And your statements, of course, will be in the record. You were very generous in having them in early so that, I had a chance to read them last night and this morning.

We will start with Mr. Pirkle.

STATEMENT OF MR. DONALD S. PIRKLE, VICE PRESIDENT AND GENERAL MANAGER OF THE INORGANIC CHEMICALS DEPARTMENT, DOW CHEMICAL, ON BEHALF OF THE CHLORINE INSTITUTE, NEW YORK

Mr. PIRKLE. Thank you, Mr. Chairman.

I'm Don Pirkle, vice president of Dow Chemical, U.S.A. And I'm here today testifying on behalf of the Chlorine Institute, which is a trade association of producers of chlorine and associated products.

Chlorine is the third largest producer of Superfund revenue. Our members pay over 50 percent of the total feedstock taxes on inorganic chemicals. The Chlorine Institute and its members support the reauthorization of Superfund, and have testified to that effect both in the House and in the Senate.

I wish to focus my remarks today on two important issues. First, the economic impact of Superfund taxes on our industry. And, second, the improper taxation of two products that we manufacture.

Major increases in feedstock taxes will compound the economic problems already faced by our industry. Growth in demand for our products is flat. Our industry is running at 75 percent of capacity. Since 1980, we have shut 12 plants down and have 6 more idle. Over 2,000 workers have lost jobs, and we are experiencing major increases in energy costs. We are also experiencing increasing amounts of untaxed import and decreasing levels of taxed exports.

Recent Superfund proposals, if enacted, would dramatically impact our industry. For example, S. 959 raises feedstock taxes moderately on chlorine but increases the taxes tenfold on sodium hydroxide and 24-fold on potassium hydroxide.

Our industry is at or below break-even today. And like many other chemical producers, we simply cannot absorb additional taxation. We strongly support funding Superfund at the $1 billion per year level recommended by the EPA, holding the feedstock taxes at their present level and expanding the tax base with a dry weight waste disposal tax for land and deep well disposal, exempting water treatment and incineration, similar to the bill proposed by

Senators Moynihan and Bentsen, and/or a broad based value added tax similar to the excise tax in S. 957.

We also recommend the removal of sodium hydroxide and potassium hydroxide from the list of taxable feedstocks because they do not meet the criteria acknowledged by the EPA for listing under Superfund. Potassium hydroxide has never been found at any Superfund site or other waste sites investigated by the EPA.

Sodium hydroxide has been found in only one NPL site out of over 1,500.

If these products did appear, the EPA recognizes in conversations we've had with them that they would contribute to the safety of the site by neutralizing hazardous waste and by sealing some of the clays that are used as liners beneath the sites.

In and of themselves these products do not pose a hazard to public health. They are approved by the FDA for use in food additives and are frequently used to clean up streams of polluted chemicals.

Thank you.

The CHAIRMAN. Thank you, sir.

[The prepared written statement of Mr. Pirkle follows:]

STATEMENT OF THE
CHLORINE INSTITUTE, INC.
ON
SUPERFUND REVENUE PROPOSALS

DONALD S. PIRKLE
VICE PRESIDENT AND GENERAL MANAGER
INORGANIC CHEMICALS DEPARTMENT
DOW CHEMICAL, USA
MIDLAND, MICHIGAN

BEFORE THE
COMMITTEE ON FINANCE
UNITED STATES SENATE

Washington, D.C.
April 26, 1985

Mr. Chairman, Members of the Committee.

My name is Donald S. Pirkle, and I am Vice-President and General Manager of the Inorganic Chemicals Department of Dow Chemical USA. I am testifying today on behalf of the Chlorine Institute, of which I am Vice-Chairman. The Chlorine Institute is a 60-year old trade association composed of the producers, packagers and distributors of chlor-alkali products. As many of you know, chlorine is the third largest chemical revenue producer for Superfund, and chlorine producers pay over one-half of the total feedstock taxes on inorganic chemicals. Thus, the Chlorine Institute is uniquely qualified to testify on the critical Superfund financing and funding issues facing this Committee today.

My testimony today reflects the Chlorine Institute's primary concerns with the Superfund program: the economic impact of the program on the chlor-alkali industry, and the improper taxation of caustic soda and caustic potash as feedstock chemicals. I have appended to my testimony additional material detailing the Institute's positions on other relevant Superfund issues.

ECONOMIC IMPACT OF SUPERFUND

The Chlorine Institute's position on the economic impact of CERCLA can be briefly stated. Major increases in feedstock tax rates will compound the economic pressures already faced by the industry, and will further impede our ability to remain competitive. Chlor-alkali production levels have remained essentially static over the past few years. The prospect is not much better for 1985. Growth in the industry is projected to be less than the rate of increase in the Gross National Product. For the past ten years, chlor-alkali producers have been running on average at about 75% of capacity.

The number of plant shut downs and attendant unemployment are significant. Since 1980, twelve plants have discontinued operations, while another six have partially shut down, causing a loss of approximately 2,000 jobs. Energy costs now account for as much as 50 percent of a producer's total costs, another of the external forces beyond the industry's control which cause the economic pressures now plaguing the chlorine and caustic manufacturers.

Although market competition usually determines the prices charged for our products, we have recently been faced with increasing imports of untaxed production from outside the United States. For example, imports of chlorine derivatives have increased significantly, but these products are not taxed and do not have to make the price adjustments required of similar domestic products. Additionally, U.S. producers have experienced a reduction in the exports of caustic. As our domestic industry is subjected to increased taxation, our products become uncompetitive on the world market. The industry will face the additional burden of product substitution as consumers turn to lower priced, non-taxed goods. In this manner, supply and demand patterns are disrupted on a worldwide basis.

In the five years since the original Superfund was enacted, the U.S. chlor-alkali industry has paid nearly $155 million in feedstock taxes, or some $31 million a year. Assuming no growth in the industry, legislation introduced last year in the House of Representatives would have increased the tax bite on the industry to over $178 million a year by 1990. A recent proposal in the House of Representatives, H.R. 2022, would tax our industry at a rate of $282.7 million annually by the end of the decade. Yet the chlor-alkali industry has been in a virtual slump over the last 15 years, and the prospects are not good for complete recovery.

The entire basic chemical industry is subject to the economic pressures I have enumerated. The industry as a whole cannot absorb an inordinate increase in the feedstock tax rates. Fortunately, there are several ways the inequitable Superfund burden now borne by the industry can be resolved. The Chlorine Institute therefore recommends that overall CERCLA spending be maintained at the $1 billion per year level EPA has testified will ensure an efficient, productive Superfund program. A dry-weight waste disposal tax assessed at a reasonable level would also help spread the burden. Without endorsing any specific proposal, the Institute also supports efforts to broaden the Superfund revenue base and generate significant revenues for the program, utilizing methods such as a corporate net receipts tax. And finally, as discussed below, the Institute recommends that sodium hydroxide and potassium hydroxide be removed from the list of feedstock chemicals.

SODIUM HYDROXIDE AND POTASSIUM HYDROXIDE: THE CASE FOR REMOVAL AS FEEDSTOCK CHEMICALS

Last year, during this Committee's hearings on the Superfund financing provisions, Mr. Christian A. Hansen testified on behalf of the Chlorine Institute. He detailed the Institute's opposition to the listing of sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash) as feedstock chemicals. Since the hearing last Fall, the Chlorine Institute has undertaken an extensive review of the two chemicals, and our conclusion is once again that these relatively non-toxic compounds do not belong on the feedstock list.

In early March, 1985, EPA officials testified before the House Subcommittee on Commerce, Transportation and Tourism that every feedstock chemical has appeared at a National Priorities List site. That is simply not the case. Potassium hydroxide has never appeared at any site reviewed under the Hazard Ranking System, much less the NPL. Interestingly enough, the Environmental Protection Agency has on previous occassion admitted that caustic potash has not been found at any site.

Similarly, sodium hydroxide has been found at only one NPL site, which is now in the early stages of remedial action. The proposed treatment at that site will be undertaken at the local sewage treatment facility, requiring none of the advanced technology sometimes associated with hazardous waste cleanup.

Recently, a group of our best industry scientists met with officials of the Environmental Protection Agency to examine the reasons behind the continued inclusion of the caustics on the feedstock list. Our conclusion (borne out by the EPA officials present) is that the listing rationale for the caustics was based on a review of the literature -- a textbook analysis that ignored the realities of caustic production, use and disposal.

In addition to their near non-appearance at NPL sites, the caustics are employed in the control of water and air borne pollutants, and are approved by the Food and Drug Administration as food additives. The compounds serve industry and the public in such diverse ways as removing high sulphur levels in petroleum and natural gas, paper pulp and cotton fabric manufacture. The Superfund tax burden now imposed on the chlor-alkali industry can be relieved to some extent by removing sodium hydroxide and potassium hydroxide from the list of feedstock chemicals. We urge the Committee to take this important step to more reasonably balance the inherent inequities in the Superfund law.

SUMMARY

The Chlorine Institute desires a Superfund program that adequately serves the public need for quick, comprehensive cleanup of hazardous waste sites. At the same time, we desire a program that recognizes the economic pressures now facing the industry and the comparitively non-toxic nature of caustic soda and caustic potash. A Superfund policy which promotes cleanup of waste sites and encourages economic development in the basic chemicals industry can be implemented. We in the chlor-alkali industry, and at the Chlorine Institute, stand ready to assist the Committee in achieving these goals.

Thank you for the opportunity to appear before the Committee today. I will be happy to answer any questions you might have.

SUMMARY OF TAX RATES
ESTABLISHED BY H.R. 1175 AND H.R. 2022
FOR CHLORINE, SODIUM HYDROXIDE AND POTASSIUM HYDROXIDE[*]

CHEMICAL	H.R. 1775	H.R. 2022			
	(all five years)	1985-86	1987	1988	1989-90
CHLORINE	$2.52	4.07	6.10	7.12	18.13
SODIUM HYDROXIDE	2.33	3.76	5.64	6.58	7.52
POTASSIUM HYDROXIDE	8.12	13.11	19.66	22.94	26.21

IMPACT OF SELECTED SUPERFUND LEGISLATION
ON THE CHLOR-ALKALI INDUSTRY
(On a worst-case, per year assessment, at highest possible rate).

CHEMICAL	H.R. 5640 (1984)	H.R. 1775	H.R. 2022
CHLORINE	$ 86.441 mil.	$ 26.794 mil.	$ 192.765 mil.
SODIUM HYDROXIDE	$ 84.097 mil.	$ 26.057 mil.	$ 84.097 mil.
POTASSIUM HYDROXIDE	$ 5.897 mil.	$ 1.827 mil.	$ 5.897 mil.
TOTAL	$ 176.435 mil.	$ 54.677 mil.	$ 282.759 mil.

[*] Based on 1984 chlorine-caustic production levels.

REMOVING CAUSTIC SODA AND CAUSTIC POTASH FROM THE LIST OF FEEDSTOCK CHEMICALS: THE CHLORINE INSTITUTE RATIONALE

The Chlorine Institute is the 60-year old trade association of the chlor-alkali industry, which produces chlorine and its co-product, caustic. Over the course of the past months, the Institute has been actively seeking the removal of sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash) from the list of taxable feedstock chemicals under the Comprehensive Environmental Response, Compensation and Liability Act.

The Environmental Protection Agency (EPA) has identified three major reasons for listing the hydroxides as feedstock chemicals. An extensive review by our best industry scientists of the scientific and practical realities of caustic use, however, refutes EPA's reasoning on each and every point. Sodium hydroxide and potassium hydroxide simply do not contribute to the Superfund problem, and in fact are part of the Superfund solution.

A. The EPA Reasoning

The Environmental Protection Agency identified three major reasons for listing sodium hydroxide and potassium hydroxide as feedstock chemicals. The Agency's reasoning is as follows:

1) The hydroxides should be taxed because their chemical derivatives are found at Superfund sites.
2) Sodium hydroxide and potassium hydroxide increase the mobility of wastes at sites, and in particular increase the permeability of clay liners often used at disposal sites.
3) The hydroxides themselves pose a direct contact threat at Superfund sites.

The EPA rationale provided for the inclusion of these chemicals on the taxable feedstock list is a textbook type analysis that simply bears no relation to the reality of the production, use and disposal of these compounds. Consideration of the current industrial practices involving these chemicals and the miniscule amounts that are environmentally available must be added to EPA's assessment to place these chemicals in proper perspective with regard to any potential environmental harm.

In the pages which follow, the Chlorine Institute's response to EPA's reasons for listing the hydroxides is detailed. As will be seen, listing the hydroxides as feedstock chemicals has little environmental basis in fact, and the Chlorine Institute urges Congress to remove the caustics from the list of feedstock chemicals.

B. The Chlorine Institute Rationale

1. The Hydroxides: General Characteristics

While it is basically true that both sodium hydroxide ($NaOH$) and potassium hydroxide (KOH) are "caustic", and as such are considered corrosive because of acute burns that may be inflicted on human or animal tissue, it must be recognized that these undesirable effects are due only to high concentrations of these materials. In dilute form, these materials pose no danger. The fact that the "reportable quantity" for releases or spills under the Clean Water Act was set at 1000 pounds is recognition of the reality that only high concentrations cause damage. The hydroxides pose no insidious hazard to human or animal life; EPA agrees that they are not carcinogens, mutagens, or teratogens. In fact, the

Food and Drug Administration has even approved both compounds as safe food additives.

The caustics are also important in pollution control. The hydroxides are used to remove acidic materials from the hydrocarbons and off-gasses, as well as wastewater treatment and pH adjustment processes.

2. Sodium and potassium hydroxide derivatives do not pose Superfund problems.

In support of this contention, the Agency states that sodium hydroxide and potassium hydroxide are used in the production of numerous chemicals found at HRS-scored sites. The Agency lists 24 so-called "derivatives" of NaOH and four "potential derivatives" of KOH. Of the 24 chemicals or chemical categories supposedly derived from caustic soda, approximately one-half involve use of caustic soda in current industry production practices. For example, EPA lists 1,1,1-Trichloroethane as a "derivative" of sodium hydroxide, with appearances at some 116 HRS-scored sites. Although NaOH can be used and was used at one time in the manufacture of 1,1,1-Trichloroethane, it no longer is used. We estimate that a maximum of 120,000 short tones per year of caustic soda is used in the production of the thirteen "derivatives"; that use represents less than 1% of total caustic soda capacity.

The implication from EPA's derivatives list is that the caustics are essential components in these manufactured products. In many instances, however, if caustic is used at all, it is used in an ancillary or dissipative use such as catalysis, caustic extraction, acid neutralization, pH control, or scrubbing of off-gases. While sodium and potassium hydroxide may be used in the manufacture of some of the listed substances, they are not retained in the final products. In most cases, caustics are consumed, i.e., neutralized, or separated from the final product as common salt. Thus, there is little relationship between the production and use of a raw material and the generation and disposal of a hazardous waste.

In summary, only 13 of 24 substances listed by EPA involve sodium hydroxide in their production processes. Less than 1% of total U.S. sodium hydroxide production capacity is used in these processes. In many cases, other alkaline materials, including lime and sodium carbonate which are naturally occurring minerals may be substituted.

Less than 2% of potassium hydroxide production is associated with the listed "derivatives." Potassium hydroxide production volume is small, only 2% of sodium hydroxide production volume.

3. Sodium hydroxide and potassium hydroxide do not increase the mobility of other waste constituents at sites

The EPA properly acknowledges that the presence of caustics may facilitate reactions at disposal sites which have the potential benefit of decreasing environmental harm from hazardous substances. For example, the materials are significant in neutralizing acids, precipitating metallic ions, and preventing the release of cyanide gas bound in metallic cyanide compounds. It is much more desirable to have a land disposal site in an alkaline condition rather than acidic. It is notable that EPA's toxicity test to demonstrate leachate potential operates in an acidic environment, and it is important to realize that the presence of caustics in Superfund sites even in very small amounts is more likely due to their use as an acid neutralizer than as disposed waste.

The Agency has focused, however, on the adverse effects which tend to be comparatively remote and improbable under the ambient pressure and temperature conditions and miniscule supposed amounts found within landfills. Particular emphasis is given by the Agency to the potential of caustics to make clay liners more permeable and thus subject to greater leakage. In some instances caustics can increase the permeability of certain clays by altering the physical structure of amorphous constituents. Research conducted by personnel at the University of Texas and Montana State University, however, suggests that just the opposite is a more likely case, and exposure to hydroxides may actually assist in reducing the permeability of certain clays, thus enhancing liner integrity. Strong acid conditions have been found to increase the permeability of clay because the clay contracted and the acid reaction with carbonates disrupted the test bed. Caustic solutions greatly reduced the test bed's permeability.

It is concluded that hydroxides do not pose a general threat to landfill liners and may enhance their holding capability. Because of their nature to render heavy metals insoluble and to neutralize acids. hydroxides or alkaline materials in landfills should be viewed positively.

4. Sodium hydroxide and potassium hydroxide do not of themselves pose problems at Superfund sites.

The Agency contends that the caustics pose a direct contact threat when present at hazardous waste sites. It is alleged that NaOH has been detected at seven HRS-scored sites, including one site on the National Priorities List (NPL). Although sodium ions may be detected uniquely, it is a fact that the OH ion (the hydroxyl ion) may originate from a variety of inorganic and organic bases. EPA has supplied information indicating the minor problems posed by the sodium hydroxide that has been found at these limited sites. In fact, at the one site on the NPL containing NaOH, treatment of the site will be through a municipal wastewater treatment plant; no unique treatment method is required. Additionally, EPA admits that potassium hydroxide has never been detected at a hazardous waste site.

It cannot be denied that sodium hydroxide is a relatively high-volume chemical; 1984 production was approximately 11.5 million tons. Potassium hydroxide, however, is produced in considerably lower amounts; total 1984 production was only approximately 225,000 tons. Significantly, both alkalies are easily neutralized and pose little environmental threat. The absence of CERCLA transportation accident claims attests to the industry's stewardship in responsibly controlling the caustics.

To summarize, the hydroxides have not been uniquely identified as significant pollutants or problems at Superfund sites. In addition, industry stewardship has fully attended to transportation incidents and the expenditure of CERCLA funds for transport accident cleanup has not been required.

SUMMARY

The reasons presented by the Environmental Protection Agency for listing sodium and potassium hydroxide as feedstock chemicals are unrepresentative of the reality of production, use, and disposal of these materials. The EPA reasoning might present the impression that the caustics are a major environmental threat; are extensively used to formulate fungicides, pesticides, and other organic complexes commonly associated with pollutants; and are responsible for a large part of the ills associated with Superfund sites and should thus bear a large portion of the burden of Superfund financing. The Chlorine Institute examination of the facts does not support these impressions. Sodium hydroxide and potassium hydroxide do not pose any significant threat -- environmental or human -- at the quantities and concentrations at which they are environmentally available. Therefore, the caustics should not be taxed under Superfund as past or present contributors to the problem. The Chlorine Institute urges Congress to take action to remove sodium hydroxide and potassium hydroxide from the list of feedstock chemicals.

CI POSITION PAPER

of the Chlorine Institute, Inc.

February 5, 1985

THE CHLORINE INSTITUTE, INC.

POSITION PAPER ON SUPERFUND REAUTHORIZATION

The 99th Congress must reauthorize the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Superfund, this year. Chlorine producers, who now constitute the third largest group of chemical taxpayers to Superfund, are significantly affected by the provisions of Superfund and pending reauthorization legislation. By the time the taxing authority of the current act expires, U.S. chlor-alkali producers will have paid over $155 million in feedstock taxes on chlorine and caustic alone, or more than $85,000 daily. A major proposal considered by the 98th Congress would have caused chlorine-caustic producers to pay over a third of a million dollars a day--roughly four times the current burden!

The U.S. chlor-alkali industry is in a depressed condition. Its share of world chlorine production which once was two-thirds has diminished to less than one-third today. Approximately 12 percent of U.S. chlorine production is exported as derivatives, and competes in the world market with untaxed materials. This competition effectively prevents any pass-through of the feedstock taxes incurred by U.S. producers. The industry is experiencing an acceleration of these trends caused by such factors as significant energy cost increases, the need to absorb the heavy costs of pollution control and other environmental regulations, as well as the development of competing overseas businesses. Uneconomic operating rates--now still only about 70-75 percent of chlorine nameplate capacity--have contributed to the discontinued operation of twelve plants since 1980. These closures represented a loss of almost 4,000 tons per day chlorine capacity and have created substantial unemployment. Annual chlorine production has experienced zero growth since 1980.

REAUTHORIZATION OF CURRENT LAW

The Chlorine Institute, Inc. is a trade association of chlorine/caustic producers, and is uniquely qualified to comment on the critical Superfund reauthorization issues. The potential impact of this year's Superfund reauthorization may very well exacerbate an already depressed industry situation. Thus, a number of Superfund issues are of specific concern to the Chlorine Institute.

The Chlorine Institute strongly supports the reauthorization of the Superfund program. All members of the Institute recognize that cleanup of priority hazardous waste sites must proceed rapidly and efficiently in order to eliminate the potential dangers posed to health and the environment by the existence of these sites. The Superfund law should be reauthorized as soon as practicable so that there will be no loss in momentum in this vital clean-up program.

REAUTHORIZED SPENDING LEVEL

A Superfund reauthorization level which exceeds EPA's stated annual needs could have the paradoxical effect of retarding EPA's clean-up activity, not speeding them up (testimony of EPA Administrator William Ruckelshaus, March 15, 1984). Overfunding would further deplete industry's capital resources and retard reinvestment, modernization and research. We believe that EPA should be provided with the funds necessary to productively carry out its Superfund mission for the next five years.

FUNDING MECHANISM

The current Superfund program is financed almost entirely by a special industry tax. This tax, imposed on the sale of certain petroleum products, organic and inorganic chemicals, is commonly referred to as the "feedstock" tax. As presently designed and operated, the feedstock system results in an inequitable tax burden on an extremely narrow segment of the industry. Specifically, only a dozen companies are now paying almost 70 percent of the Superfund tax. A more equitable apportionment of the tax burden is needed in which everyone who is or has been part of the hazardous waste disposal problem is part of the Superfund solution.

We believe that one way to achieve a more equitable allocation of the Superfund tax is by supplementing the current funding approach with a "waste-end" approach which taxes the types of hazardous waste which the Superfund program is designed to clean up. The need for significant feedstock tax increases could be reduced by the establishment of a waste-end tax at reasonable levels.

Such a "waste-end" tax should be designed to achieve certain important objectives:

- To distribute fairly the tax burden of site cleanup on all hazardous waste disposers;
- To provide a direct economic incentive to minimize waste disposal practices that have resulted in Superfund sites; and
- To encourage the use of alternative methods of disposal, such as treatment and incineration, rather than land disposal.

A reasonable "waste-end" tax on each dry weight ton of hazardous waste received for land disposal or long-term storage would achieve these objectives. We therefore strongly support enactment of such a tax.

TAXATION OF SODIUM HYDROXIDE AND POTASSIUM HYDROXIDE

Under current law, caustic soda (sodium hydroxide) and caustic potash (potassium hydroxide) are subject to the feedstock tax. We are convinced that these materials are not the types of chemicals that were intended by the Congress to be in the class of taxable feedstocks.

Caustic soda and caustic potash do not contribute to the hazardous waste problem. Among their many uses is the neutralization of acids commonly found at hazardous waste sites. The caustics are also important in air and water pollution control systems, food processing, paper manufacture, cotton cloth production, and household products. Neither compound is on any list of suspected carcinogens, mutagens, or teratogens, and, in fact, the Food and Drug Administration has approved both compounds as safe food additives.

By taxing sodium hydroxide and potassium hydroxide as feedstock materials, the very intent of Superfund is defeated. Superfund was meant to protect the environment from hazardous wastes. Continuing to impose a tax on caustic soda and caustic potash--environmentally beneficial chemicals--ignores their contribution to the Nation. When applied to caustic soda and caustic potash, the feedstock tax can only be termed counterproductive. For these reasons, the Chlorine Institute strongly recommends that these two caustics be removed from the list of Superfund "feedstock" chemicals.

VICTIM'S COMPENSATION

In the 98th Congress, several "victim's compensation" proposals were made. The proposed programs would have provided payments to persons whose health may have been affected by exposure to hazardous substances. A victim's compensation program under Superfund would add a serious and enormously costly federal program to EPA's basic clean-up mission and would divert needed funds from cleanup and control programs. Furthermore, companies that did not create hazardous waste problems in the past and therefore are not responsible for injuries caused by hazardous substances will face an additional economic burden under Superfund.

The Chlorine Institute believes that Congress should carefully deliberate a victim's compensation proposal on its own merits. Such legislation should not be linked to the critical provisions of the Superfund's reauthorization legislation.

SUMMARY

The Superfund reauthorization should create a program that is more equitable, efficient, and attuned to the hazards which created the need for the original legislation. The Chlorine Institute endorses a reasonable spending level, the enactment of a waste-end or similar tax, the removal of caustic soda and caustic potash from the list of feedstock chemicals, and the separate consideration of victim's compensation legislation.

Questions on the Chlorine Institute's position on the Superfund's legislation may be directed to Mr. Robert L. Mitchell, Jr., President of the Institute, at (212)819-1677.

THE CHLORINE INSTITUTE, INC.
70 W 40TH STREET
NEW YORK, N.Y. 10018
212 819-1677

STATEMENT OF ROBERT A. MALONE, DIRECTOR OF ENVIRONMENTAL AFFAIRS, KENNECOTT CORP., SALT LAKE CITY, UT

The CHAIRMAN. Mr. Malone.

Mr. MALONE. Mr. Chairman, and members of the committee, my name is Bob Malone. I'm director of environmental affairs for Kennecott.

We appreciate the opportunity to comment on this important topic and request our written statement be made part of this record.

Our statement focuses on the effects of Superfund options on the international trade and competitiveness of the domestic copper industry. The facts presented argue strongly that the economic consequences of any waste end or feedstock tax on the copper industry would be adverse and substantial.

Our statement also highlights the fact that copper metal is environmentally benign. And, in fact, is a vital strategic material and essential tc our industrialized economy.

In September of last year, Kennecott, which is the Nation's largest copper producer, commented on Superfund before this committee. Since the time of that presentation, the economic situation of the domestic industry has grown yet more critical. Last month, we announced the indefinite suspension of operations of our Utah Copper Division—the largest mining and smelting complex in the United States, and one of the largest in the world. It's closure will result in a total loss of employment of some 8,000.

And the impact is not only in just the State of Utah, but nationwide, 15 percent of the domestic supply of copper will be removed from the market with the closure of this facility.

As my first chart indicates (table A-2 of written statement) the domestic copper industry, which was once the largest, is now deeply troubled. Since 1981, almost 50 percent of domestic mine production has closed. And some experts feel that many of these mines will not resume operation.

Employment in the industry has been cut in half. We now have approximately 20,000 employees.

The aggregate losses since 1981 of the five major primary producers of copper in the United States is rapidly approaching $3 billion.

Our second chart looks at the net balance in trade. (See fig. 1 of written statement.) We see copper imports rising substantially as copper exports remain stagnant. In fact, exports are decreasing. In 1975, we had a net copper trade surplus of some $50 million. The Commerce Department now projects a copper trade deficit in 1985 in excess of $700 million.

It's not just the primary copper producers who are suffering. Our next chart shows that the copper and brass fabricating industry also is suffering from the imports (see fig. 3 of written statement). This industry employs over 100,000 and has faced as much as 100-percent increase in imports in a 1-year period.

In summary, and in view of the above facts, we would strongly urge Congress to recognize the inability of the domestic copper industry to absorb any future feedstock or waste-end taxes under the Superfund Program.

[The prepared written statement of Mr. Malone follows:]

STATEMENT OF KENNECOTT
BEFORE THE
SENATE FINANCE COMMITTEE
ON
SUPERFUND REAUTHORIZATION

Robert A. Malone
Director, Environmental Affairs
26 April 1985

Introduction

Mr. Chairman and members of the Committee, my name is Robert Malone. I am Director of Environmental Affairs for Kennecott.

Kennecott appreciates the opportunity to comment on this important topic. Our statement focuses on the effects of Superfund options on the international trade and competitiveness of the domestic copper industry. The facts presented in this statement argue strongly that the economic consequences of potential Superfund feedstock and waste-end taxes on the copper industry would be adverse and substantial. In addition, there are important environmental reasons why the copper industry should not be subject to Superfund taxes, which are addressed briefly in the appendix to this document.

Recent Developments

Kennecott, the nation's largest copper producer, commented on Superfund before this Committee in September of last year. Since the time of this presentation, the economic situation of the domestic copper industry has grown yet more critical. In March of this year, for example, Kennecott announced the indefinite suspension of operations at its Utah facilities -- one of the largest in the world -- an action that idled a total of nearly 8,000 workers. Table A-1 at the end of this statement presents a brief chronology of major events in the copper industry since 1982 with emphasis on the activities of Kennecott. It is grim and discouraging reading; the chronicle of a once mighty but now imperiled domestic industry struggling for survival. Notwithstanding these developments, however, we are confident that, over time, the industry can become fully competitive and rebound successfully. But, we do not have an unlimited capacity to absorb punishing losses, and that is why we need your cooperation now. Our specific recommendations are given at the end of this statement. Relevant background and the reasons supporting these recommendations are given next.

Copper: A Vital Metal

Copper is a vital industrial material, essential to any industrialized economy. Key industrial sectors which use copper include building construction (e.g., plumbing, brass fittings, water heaters, wire), electrical and electronic products (e.g., wiring, power cables, motors, generators), industrial machinery and equipment (e.g., valves and fittings, pumps, air conditioning), consumer and general products (e.g., washing machines, refrigerators) and transportation (e.g., auto radiators, cable harnesses, starter motors, ship propellors).

Copper also has many national defense applications. In unalloyed form it is used as a conductor in all communication and control systems, and advanced weapon systems. Copper and brass are used in all forms of military transportation systems and for cartridge and shell cases and other ammunition components. Because of its military importance, copper is classified as a strategic and critical commodity. Moreover, it is designated as one of four "controlled materials" (others are steel, aluminum, and nickel alloys) whose central management has been essential to past mobilization efforts, and figures prominently in the Defense Priorities and Allocation System.[1]

It is important to note that the United States has abundant reserves and resources of copper, ranking second only to Chile in the Western World. Unlike the situation with many other metals, total self-sufficiency in copper is a viable policy option for the United States.

Copper is Environmentally Benign

Copper metal is environmentally benign. Copper is widely used in applications that involve human contact or exposure, such as jewelry, coinage, cooking utensils, water pipes, etc. Indeed, copper is an essential element for humans.

The International Market

Copper is a price-sensitive international commodity produced in several countries of the world. Major producers of primary copper include Chile, USSR, United States, Canada, Zambia, Zaire, Poland, Peru, Philippines and Australia. Much of the copper produced in the developing countries is exported to the industrialized countries for further treatment (smelting, refining) or fabrication and use. There are important exchanges (e.g., the London Metal Exchange (LME) and the New York Commodity Exchange (COMEX)) that establish a world pricing structure reflecting the world balance between supply and demand. Domestic prices, therefore, cannot be set unilaterally by U.S. producers (e.g., increased to cover Superfund tax burdens) without risk of losing market share.

Copper is imported to the United States in a variety of forms including ore concentrates (for subsequent smelting and refining), blister (for subsequent refining), refined (for fabrication), semi-fabricated shapes, copper scrap and as "contained copper" in finished products. The export trade balance is highly sensitive to relative production costs and prices.

The Present Situation Of The Domestic Copper Industry

As noted above, the U.S. copper industry, once the world's largest, is now deeply troubled. Relevant statistics include:

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[1] Federal Register, Vol. 49, No. 147, Monday, July 30, 1984, pp. 30412-30444.

- Approximately 40 - 50% of domestic copper mines are closed, as shown in Table A-2, and it is doubtful that many will ever reopen.

- The workforce in the copper mining, smelting and refining sector has dropped more than 50% to a present level of about 20,000 down from 44,000 in 1979.

- The 5 major domestic primary copper producers have lost an estimated $3 billion dollars between 1981 and the present. Losses at Kennecott alone have exceeded $500 million over this same period. Kennecott is currently losing $15 million per month.

- Beginning in 1982, the U.S. economy has emerged from a painful recession. Domestic copper demand has likewise recovered, but a strong U.S. dollar and overproduction from partially subsidized and government-owned producers in the Third World has kept prices close to depression era levels in real terms. As a recent Commerce Department survey notes,[2]

  > "During the first 8 months of 1984, COMEX prices averaged 63.2 cents a pound, down 16 percent from the similar 1983 period and 4 percent below the average 1982 price, a year of deep recession. Although prices recovered slightly late in the year, they remained relatively depressed. In real terms, 1984 copper prices were at their lowest levels in 50 years. Because U.S. producers, for competitive reasons, base their prices directly or indirectly in COMEX, they were forced to reduce prices during 1984. U.S. producer prices averaged about 67 cents a pound in 1984, down 12 percent from the previous year and down about 34 percent from the average price of $1.01 attained in 1980. Throughout the year, domestic and world copper prices reacted only to bearish supply factors and ignored numerous positive developments such as improved demand, (especially in the United States), conflicts in Central America and the Middle East, and political unrest in some foreign producing countries. Such factors have, in the past, tended to support prices."

- The world oversupply of copper (exacerbated by non price-responsive decisions by Third World producers) coupled with the significant increase in U.S. demand, caused foreign producers to seek outlets in the United States. Refined copper imports which, as recently as 1979, were only about 10% of domestic consumption, surged to 26% in 1983 and, according to Commerce Department projections will reach 35.5% in 1989.[3] In 1984, eleven domestic copper producers filed a petition before the United States International Trade Commission (USITC), under Section 201 of the Trade Act of 1974, alleging that refined and blister copper imports were causing significant injury and requesting quotas to be imposed. The USITC, in an unanimous decision, found that imports were a substantial cause of serious injury to the domestic industry. USITC recommended further that quotas or tariffs were an appropriate remedy. Although President Reagan chose not to act on these recommendations for other reasons, the USITC finding of injury was not disputed. Copper imports, exports and balance-of-trade data are given in Figure 1. As can be seen, trade deficits in refined copper have greatly increased since 1975.

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[2] U.S. Department of Commerce, International Trade Administration, 1985 U.S. Industrial Outlook 1985, pp. 20-1.

[3] Ibid, p. 20-1.

- Likewise, domestic copper and brass fabricators have experienced sharply increased competition from imports. Imports of copper mill products in 1984 averaged nearly 39% more than those in 1983, while copper alloy imports, including brass mill products, were up 47% over this same period.[4] Figure 2 shows the percentage increase for the various copper and brass mill products. For some of these products, 1984 imports were nearly twice 1983 levels. This year, copper and brass fabricators have filed a series of "anti-dumping" and "countervailing duty" petitions before the USITC, a move which reflects their growing concern over the trade balance in copper fabricated products.

- The domestic copper industry has responded with a vigorous program of rationalization and modernization. By closing unprofitable mines and implementing cost saving measures the domestic industry has lowered production costs by 18% between 1981 and 1984, according to estimates made by the U.S. Bureau of Mines. Kennecott's cost reductions have been even more dramatic. Impressive as these gains are, they have not been sufficient to offset the precipitous decline in copper prices during this same period, nor prevent further curtailments in domestic operations.

While some analysts point out that the "fundamentals" (i.e., demand/supply balance, inventory/consumption ratios) point in the direction of a recovery for the world copper industry (and, indeed, prices have increased slightly in the past month), others believe that the outlook for the domestic industry is for a continued struggle. The Department of Commerce most recently noted,[5]

> "The prospects for the domestic copper-producing industry are negative. U.S. producers have been adversely affected by the events of the past few years, especially by the effects of low price levels. These producers have incurred substantial losses, and have been forced to increase their debt burdens. In addition, domestic producers will continue to face costly environmental regulations and competition from foreign producers, whose production policies, at times, tend to ignore weak market conditions. In the

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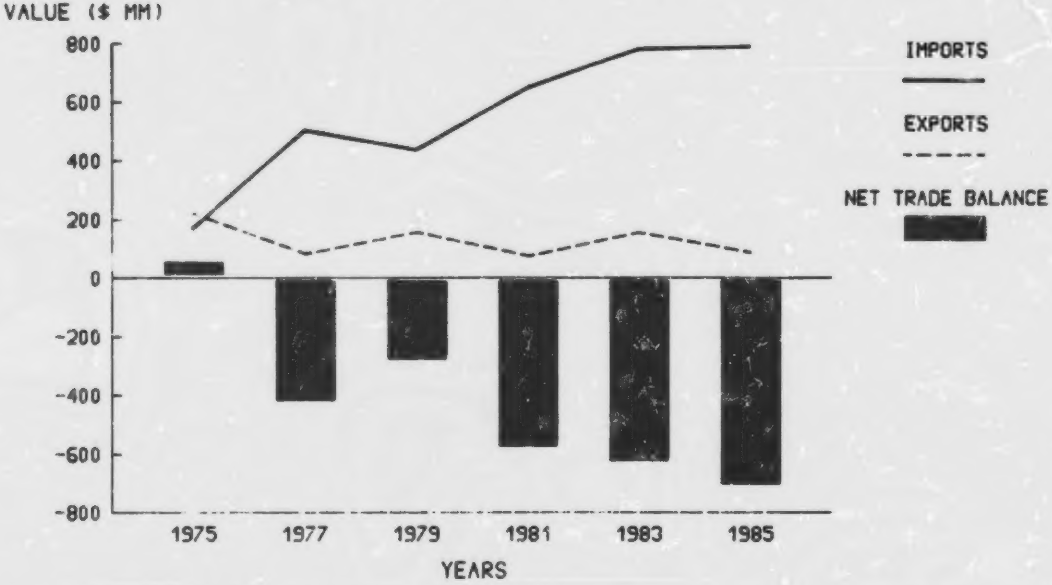
[4] Data from the Copper and Brass Fabricators Council, Washington, D.C., February 6, 1985.

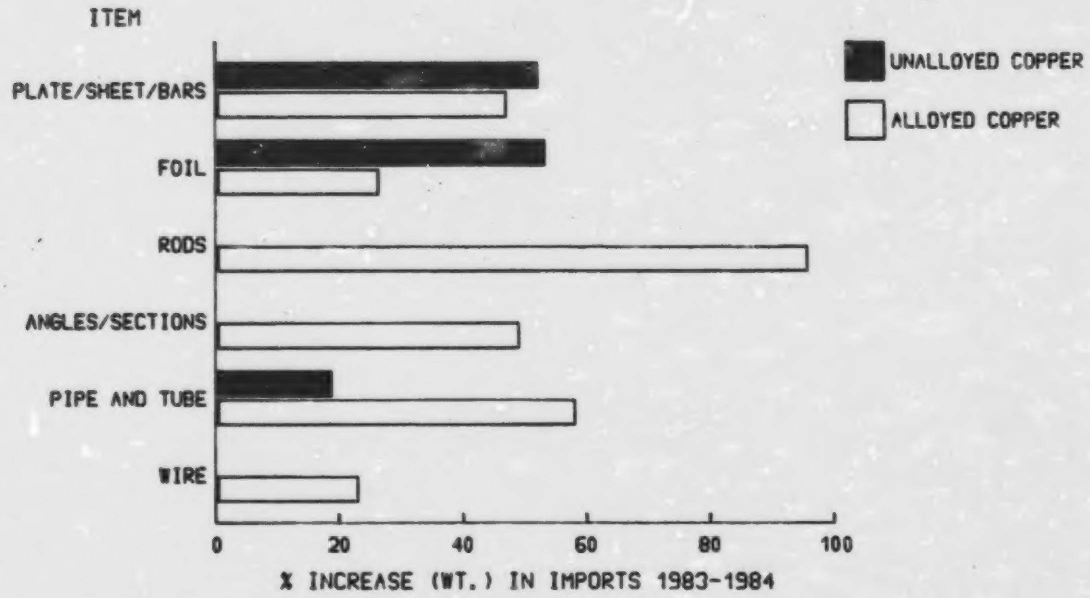
[5] U.S. Department of Commerce, International Trade Administration, 1985 U.S. Industrial Outlook 1985, pp. 20-3.

FIGURE 1. U.S. IMPORTS, EXPORTS, AND NET BALANCE OF TRADE IN PRIMARY COPPER SHOW SUBSTANTIAL TRADE DEFICITS IN RECENT YEARS



SOURCE: DEPT. OF COMMERCE DATA, AS GIVEN IN VARIOUS ISSUES OF "U.S. INDUSTRIAL OUTLOOK". 1985 DATA ARE DEPT. OF COMMERCE ESTIMATES.

FIGURE 2. PERCENTAGE INCREASE IN THE IMPORTS OF COPPER AND BRASS MILL PRODUCTS FROM 1983-1984



SOURCE: COPPER AND BRASS FABRICATORS COUNCIL, INC., WASHINGTON, D.C., FEB. 6, 1985.

> absence of a significant and sustained increase in price, total production could fall about 15 percent, and primary production could decline about 28 percent by 1989. It is likely that domestic producers will permanently close their highest cost facilities and concentrate their cost reduction efforts at their most efficient operations. Imports are expected to increase significantly and could account for more than 35 percent of consumption by the end of the decade."

Three clear points emerge from the above.

- The very survival of this strategically vital domestic industry is at stake. The United States has moved from an historical position of over 90% self-sufficiency in copper to one of progressively greater import dependence — a situation not brought about by a lack of natural resources, but rather from a failure of policy.
- Both primary producers and fabricators are facing intense foreign competition and the balance of trade has deteriorated alarmingly in recent years.
- Any additional economic burden that would result from imposition of Superfund feedstock, or worse, waste-end taxes, would be counterproductive. Funds badly needed for further modernization to improve the industry's competitiveness would be diverted, and the decline of a vital industry will be hastened.

Copper And Superfund: The Present Situation

In 1980 when Superfund was enacted, Congress considered whether copper metal should be taxed under Superfund. After a careful review of the available evidence, Congress rejected such a tax as inappropriate for non-toxic copper metal, and instead placed a feedstock tax on three potentially hazardous copper compounds (i.e., cupric oxide, cupric sulfate, and cuprous oxide) which are only produced in small quantities (less than 1%) relative to copper metal. These chemicals are not a byproduct of primary copper production, but rather manufactured by a distinct industry.

Adverse Developments

As the time for reauthorization of Superfund draws near, there are three developments which could adversely alter the present situation:

- Last year's House legislative bill (i.e., HR 5640 which passed the House in August, 1984 and which may be reintroduced in this Session) added copper metal to the list of taxable feedstocks to raise additional revenue without addressing the economic impacts on the industry — despite Congress' earlier findings against taxing copper metal — and at tax rates that would cost the industry more than $375 million over a five year period. Two House bills in this legislative session -- HR 1775 (Representative Moore) and HR 2022 sponsored by Representative Sikorski — using the feedstock list from H.R. 5640 call for copper metal to be taxed as a feedstock.

- Some Senate legislative proposals have been offered that would impose waste-end taxes which, depending upon the bill and its subsequent interpretation, could cost the domestic copper industry from $37.5 million to $102.2 million over a five year period. This may not reflect Congressional intent, as mining wastes are exempted in each of these bills. Nonetheless, EPA has proposed a "reinterpretation" of the Mining Waste Exclusion which would reclassify certain smelter/refinery wastes and, thus, make them subject to Superfund taxes.[6]

- EPA has completed a series of so-called "Section 301" studies that erroneously conclude that copper metal is eligible for Superfund taxation based on the mere presence[7] of copper at Superfund sites (without regard to its mobility/toxicity/hazard), consider waste-end taxes which could cost the industry from $172.5 million to $545 million over a five year period, and finally conclude falsely that the impacts of these taxes would be "slight". In response to sharp questioning, EPA conceded that their "Section 301" studies did not reflect "current realities," but this admission is buried in the fine print of a hearing transcript.[8]

Depending upon the specific option and its subsequent interpretation, Superfund taxes could range as high as nearly 5 cents/pound of copper. Consequently, feedstock and waste-end taxes could significantly harm the U.S. balance of trade in both refined copper and fabricated copper products.

Why Feedstock Taxes Would Harm Competitiveness and The Balance of Trade

Feedstock taxes, if imposed, would apply to domestic refined copper production and imports of refined copper. Such taxes would increase the differential between the U.S. copper price and that prevailing on the world market,[9] creating a two-tier market for refined copper. Domestic copper and refined copper imports to the United States would trade at one price, while refined copper in the world market would trade at a different, and lower price. Given this two-tier price structure, offshore copper fabricators could purchase copper at the lower world price, transform it to copper products that would enter the United States free of any feedstock taxes (e.g., copper tube, wire, semifabricated and fabricated products, and in alloyed forms (e.g., brass mill products, etc.) and thus enjoy lower costs in a business where competitive advantage is figured in pennies per pound.

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[6] 49 FR 42132, October 22, 1984.

[7] Indeed, an analysis of a soil sample from the grounds of the Capitol contained copper at 3.1 times the mean level, and 10.1 times the median value of copper analyzed at NPL sites! The point here is that copper levels at NPL sites are hardly appropriate to justify Superfund expenditures.

[8] Unedited Hearing Transcript, 21 March 1985, before the House Subcommittee on Commerce, Transportation, and Tourism, lines 1016 to 1045, pages 43-44.

[9] A differential exists at present, which only reflects transportation costs to the United States, and a small tariff.

The National Electrical Manufacturers Association (NEMA), testifying in opposition to the petition before the International Trade Commission by primary copper producers in 1984 to provide a quota or tariff on refined and blister copper -- an action that would have created a similar two-tier structure -- offered the following comments.[10]

> "A two-tiered price for copper of this sort -- *even if it were only as much as a few cents per pound* -- *would have serious adverse consequences for the fabricating segment of the U.S. copper industry*. U.S. producers of copper wire and cable and brass account for over 90 percent of the refined copper consumed in the United States. For these companies -- many of whom might be called metal converters as accurately as metal fabricators -- copper is overwhelmingly the largest cost element. *Copper accounts, on average, for about fifty percent of the value of many high volume fabricated copper products* (e.g., building wire and magnet wire). *The percentage of value-added represented by copper can run as high as 70 percent for some brass products* (*e.g.*, copper plumbing tube). Under a two-tiered world price structure, these fabricators would be forced to purchase their chief input at a higher price than their foreign competitors. *Given that operating margins are already too low to absorb additional cost increases, the inevitable result is that U.S. copper fabricators would lose market share to foreign fabricators.* Foreign sellers of refined copper could not absorb the tariff without engaging in dumping, or lowering their prices worldwide by the amount of the U.S. tariff, an unrealistic assumption. The price gap could only be closed by sufficient imports of fabricated copper products to drive down the demand for, and therefore the price of, domestic refined copper." (Emphasis added)

In an earlier submission, NEMA argued strongly that a two-tier price structure would change dramatically the *effective rates of protection* afforded various fabricated copper products and upset the carefully crafted tariff structure on these products.[11]

None of these phenomena, incidentally, were considered by the model used by EPA for its analysis of the effects of copper feedstock taxes. As noted in the 301(a)(1)(H/I) report,[12]

> "Because the framework is a partial equilibrium model, it estimates effects on the copper industry, for example, without allowing for changes in other sectors of the economy . . . In addition, the framework does not estimate effects on downstream markets."

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[10] Wolff, Alan W., *et al.* "Memorandum in Opposition to Import Relief" submitted to the Trade Policy Staff Committee, Unwrought Copper, Investigation No. TA-201-52, July 26, 1984, pp. 5 *et seq.*

[11] Wolff, Alan W., *et al.*, "Remedy Brief on Behalf of the National Electrical Manufacturers Association (NEMA)," before the United States International Trade Commission, Unwrought Copper, Investigation No. TA-201-52, June 18, 1984, pp. 18 *et seq.*

[12] Office of Solid Waste and Emergency Response, USEPA, *Impact of Taxing Copper Lead, Zinc Oxide, Fertilizer Feedstocks, Coal-Derived Substances, and Recycled Metals, CERCLA Section 301(a)(1)(H/I) Studies*, December 1984, pp. 3-4.

This simplified model was used because EPA chose to limit its contractual support work[13] and justified by the glib assertion that . . . "legislative histories . . . appear to indicate that most concern has been expressed over potential first-order effects on metals themselves."

The quantitative effects of this omission are not known with precision. However, NEMA estimated that the potential effects of a 5 cents per pound differential between the COMEX price and the world price (such as would occur from a tariff or a combination of feedstock and waste-end taxes) "would result in at least a 21.7 percent increase in fabricated copper imports over the level of the first quarter of 1984 . . . that volume of increased imports would cost U.S. fabricators $182.9 million in lost sales, and 4,573 jobs would be lost in copper fabricating."[14] To a first approximation, these effects ought to vary linearly with price differential, so, for example, even a 2 cent per pound effective tax would be expected to have a downstream impact of approximately 40% of that cited above. All these impacts are in addition to those on primary copper producers.

If domestic fabricators are injured and effectively lose market share to foreign producers, then so too do producers of primary copper, since the domestic fabricators are their customers.

Why Waste-End Taxes Would Harm Competitiveness and The Balance of Trade

Unlike feedstock taxes which would be levied on both domestic production and imports, waste-end taxes would apply only to domestic production. This tax would place domestic producers at an unfair and significant disadvantage relative to foreign competitors:

- Primary copper producers would be placed at an unfair competitive disadvantage relative to foreign producers in both the domestic and foreign markets since there is no way the wastes of foreign producers would be taxed. They would face the dilemma of either absorbing the tax (and thus increasing their operating losses) or losing market share. Refined copper exports, averaging 105,000 metric tons in 1983 and 1984 according to U.S. Commerce Department data, would decrease and imports would increase if a waste-end tax were imposed.

- Copper fabricators would not escape these effects, because wastes are also generated and disposed in the fabricating process, on which taxes would have to be paid. The trade balance in fabricated products would likewise be adversely affected since wastes generated in the production of foreign fabricated products would similarly be untaxed.

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[13] The ICF report, on which the EPA study is based (ICF Incorporated, "Analysis of Substances Exempt From CERCLA Tax Pursuant to 301(a)(1)(I)(H) and Analysis of a Tax on Coal-Derived Substances and Recycled Metals Pursuant to 301(a)(1)(I)," Washington, D.C., November 1983, p. 5 - 3), noted " . . . to analyze potential effects on downstream products would require a comprehensive econometric model beyond the scope of this project." While such economy in government spending is otherwise commendable, these results may have major adverse effects on the copper industry.

[14] Wolff, Alan W., et al. "Memorandum in Opposition to Import Relief," submitted to the Trade Policy Staff Committee, Unwrought Copper, Investigation No. TA-201-52, July 26, 1984, pp. 5 et seq.

Waste-end taxes could prove extremely costly. In the domestic primary copper industry, for example, nearly 600 tons of rock, ore, and other material are handled to produce one ton of refined copper. Unlike other industries, even modest taxes per ton of waste translate to large taxes on a unit product basis. Moreover, these taxes might not be entirely under the control of Congress. EPA could, merely by reinterpreting or reclassifying wastes as hazardous (as has already been proposed for certain smelter/refinery wastes), effectively alter the tax burden on the industry without congressional review. Waste-end taxes have other disadvantages as well, as shown in Table I. For all these reasons, Kennecott is strongly opposed to waste-end taxes.

The "Section 301" Studies

As the above remarks indicate, the overall economic impact of possible Superfund taxes on the copper industry could be severe. This assessment is markedly at variance with the conclusions reached by EPA in its studies of Superfund taxation options and their impacts on the primary copper industry.

There are important conceptual and methodological flaws in the EPA analysis which invalidate the EPA conclusion that the impacts of these taxes would be "slight." With respect to EPA's economic analysis, the most egregious errors are:

- The analysis in the EPA reports considers feedstock taxes only, even though waste-end taxes are also proposed and EPA is planning to reinterpret the mining waste exclusion for certain smelter/refinery wastes. Consequently the analysis significantly understates the total tax burden on the domestic copper industry.

- EPA's economic analysis uses an overly simplified model which makes unrealistic assumptions (e.g., a perfectly competitive industry), employs out-of-date values for important economic variables, (e.g., demand and supply elasticities) and neglects entirely the effects on downstream industries.

No useful conclusions can be drawn from the EPA analysis. Moreover, this view is not ours alone. The U.S. Department of Interior, Bureau of Mines was unusually blunt in its criticism of the EPA report, noting that[15] "there are many serious shortcomings in the EPA economic analysis and, therefore, the findings cannot be accepted." Specific shortcomings of the economic analysis noted by the Bureau of Mines include many of those noted above, and, additionally:

- The EPA analysis assumed that there is no co-production of copper, lead or zinc. In fact co-production needs to be considered since the tax on one substance will affect the production and economics of its co-product.

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[15] U.S. Department of the Interior, Bureau of Mines, "Comments on EPA Final Report of December 1984 Required Under Sections 301(a)(1)(H) and (I) of the Comprehensive Environmental Response Compensation and Liability Act of 1980," January 1985, p. 6.

TABLE I.
MAJOR DISADVANTAGES OF A WASTE-END TAX IN THE SUPERFUND CONTEXT

CLASSIFICATION	BRIEF DESCRIPTION
INEQUITABLE	1. It would create an unfair economic advantage favoring imported products (untaxed by this scheme) over domestic equivalents (subject to the tax). 2. Absent some "degree-of-risk" provision that would attempt to rank the relative toxicity of different waste-streams, the tax would be unfair to producers of high volume, low toxicity wastes. The quantification of degrees of risk may present an administratively infeasible task.
UNRELIABLE	3. GAO studies of state-implemented waste-end taxes have indicated that states (1) have not collected the revenues that were anticipated and (2) have not determined if the tax achieved its objective of encouraging more desirable waste management practices. 4. Those firms with economically viable technological alternatives to reduce waste volumes will do so — and while this may achieve a desirable social goal it does not produce consistent funding. There is thus a tension among objectives. As GAO noted, there are "conflicting objectives inherent in many waste-end tax systems. The more successful the tax is in achieving its objective of encouraging more desirable waste management practices the less successful the tax will be in raising needed revenue."
PERVERSE INCENTIVES	5. It may encourage illicit waste disposal and intentional under-reporting of waste generation rates.
POTENTIAL FOR ECONOMIC DISLOCATION	6. Establishing statutory tax rates on categories of waste without regard to product value or economic impacts may create severe and unanticipated economic dislocations.
ADMINISTRATIVE DIFFICULTIES IN IMPLEMENTATION	7. The 1980 Senate Committee report on CERCLA observed that far fewer companies (1,000) would be subject to feedstock taxes compared to a possible 260,000 waste generators who might be covered under a waste-end tax. 8. The objective of simplicity suggests that RCRA and CERCLA should not be intermingled. Such a procedure could impede the functioning of both. RCRA already has in place a satisfactory system of regulations and incentives to reduce and control present and future waste generation. CERCLA should be utilized as it was intended — to provide fast, efficient, and cost-effective cleanup of abandoned sites.
UNEVALUATED	9. There has been no comprehensive assessment of the economic impact of waste-end taxes across varying industries. Absent such analysis, there is not a sufficient basis for rational decision-making. 10. Waste generation rates per unit of useful product vary tremendously among industries. Any across-the-board tax rate is likely to have vastly different (and presently unknown) effects on the respective industries. 11. With respect to the non-ferrous mining and metals industry, waste-end taxes in the amounts proposed in earlier bills could reach truly extraordinary proportions.

- The EPA report, using pre-1970 data, failed to recognize the major changes in the structure of the world copper industry that have occurred in the past decade. These changes include the emergence of foreign government-owned producers, development of substitutes for copper, the dramatic rise in energy costs and changes in the cost structure of the industry. Collectively these factors act to increase the economic impact of Superfund taxes on the copper industry.

- The EPA report fails to recognize the current crisis in the industry. As USBM stated "The revenue losses under the various tax rates . . . (considered in the report) . . . are not trivial for those U.S. copper firms presently facing major financial difficulties and for firms in the other industries as well. More specifically, the impact of a two and three percent excise tax on value is quite significant for the domestic copper industry where profits have been negative for the last four years, and especially if there are expectations of higher tax levels in the future."

- USBM added: "Taxing the metals and exempting the recycled metals could create a situation in which imported primary metals could possibly flow into the United States untaxed by being characterized as recycled metals. Moreover, a tax applicable on secondary production would only be effective if both secondary refined metal and the content of secondary alloy metal were taxed. Furthermore, recycled metals are used extensively by the chemical sectors where the hazardous waste or toxic problems exist."

In aggregate, USBM noted no fewer than ten significant flaws in the economic analysis alone. Numerous errors in the technical and environmental sections of the "Section 301" reports were also noted by the Bureau of Mines. These flawed EPA reports simply cannot furnish a useful foundation for development of rational policies.

Kennecott's Recommendation

Kennecott strongly urges that Congress not impose either feedstock or waste-end taxes on copper or other environmentally benign metals. With respect to copper, these taxes cannot be justified on environmental grounds, and imposition of these taxes would exacerbate the already significant trade and competitiveness problems facing the industry. We cannot pass on or absorb these taxes and believe that it is unwise public policy to place additional burdens on the copper industry.

APPENDIX
COPPER, SUPERFUND, AND NPL SITES

Introduction

The EPA "Section 301" studies are directed to consider "(A)n exemption from or an increase in the substances or the amount of taxes imposed by section 4661 of the Internal Revenue Code of 1954 for copper . . . , based upon the expenditure experience of the Response Trust Fund."

These studies suggest that copper metal is an appropriate substance for taxation, based on (i) copper's reported or assumed presence at approximately 9% of the NPL sites, (ii) laboratory results on soil and water samples for 73 case studies (assumed to be equivalent NPL sites) showing copper present above detectable limits and (iii) presence of copper at 1 site where remedial action has been taken. Importantly, the EPA stated "The exact number of sites represented by these samples cannot be known." However, using a scoring system based on the frequency of occurrence of various compounds at these NPL sites, the studies calculate that copper's "appropriate" contribution to Fund revenues is 0.67% of the total, equivalent to a $4.25/ton feedstock tax based upon assumed Fund revenues of $1 billion annually.

It is Kennecott's position that there are significant logical and scientific flaws in these analyses which render the conclusions invalid. Some of the more egregious errors are highlighted below.

Kennecott Analysis

- Many of the "Section 301" study conclusions are based on the frequency of occurrence of copper at NPL sites, used as a surrogate for "the expenditure experience of the Fund." In other words, it is assumed that the mere presence of a substance at levels above analytically detectable limits occasions or will occasion remedial action. There is no consideration of concentration, exposure, or toxicity relationships — all key variables necessary for a rational assessment. Thus, if, for example, both copper and dioxin were the only substances present at a site above detectable limits, copper is assigned a 50% contribution-to-site cleanup costs. This assumption both is naive and unwarranted.

- The detectable limit of copper in soil is approximately 0.1 parts per million (ppm). The copper content in the earth's crust averages between 4 to 90 ppm, dependent upon the type of soil or rock (see following table), so it is likely that most, if not all, NPL sites will contain some copper — but so too would Yellowstone Park, the Grand Canyon, etc.

- With respect to the reported analytical data:

  There is no consideration of whether a given sample represented a sample of the actual waste material, a sample of contaminated ground water or surface water, or natural background conditions, etc., in the use of these data for definition of copper's contribution to the Fund. Indeed,

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in EPA's own Section 301 studies: "Caution should be taken in interpreting these findings, however, as information on the sampling procedures, types and locations of samples relative to drinking water supplies are not available." (Emphasis added)

- The 1979, EPA Water Quality Criteria concluded that copper in water was non-teratogenic, non-mutagenic, and non-carcinogenic. Also, the Agency pointed out that ". . . there is much more likelihood of a copper deficiency occurring than of a toxicity developing with current dietary and environmental situations." EPA concluded that the drinking water standard of 1.0 mg/liter (1.0 ppm) was " . . . below any maximum hazard level, even for special groups at risk." (Emphasis added) The maximum level was established for taste considerations and not for any health reason.

- Of the 800 water samples collected and with 718 analyzed for the 73 cases in this study (unknown number at sites but EPA assumed to be essentially equivalent to 73 sites), EPA reported:
  - 102 samples (14.2%) were below the detectable limit of 0.001 ppm.
  - 410 samples (57.1% of total) are below 1/20 of the maximum concentration limit (MCL) set by EPA for copper in water.
  - 687 samples (95.7% of total) are below 1/2 of the MCL set by EPA for copper in water.

Soil sample data from the same sites (page 2-17) indicate:

- 12 of 320 (3.8%) were below the detectable limit.
- 166 samples (51.9%) were below 8.9 ppm copper content.
- The arithmetic mean was reported as 29.3 ppm, not including those samples below the detection limit which if included would reduce the mean concentration.
- The following data on copper concentration in various rocks and soils are furnished to lend perspective to the NPL sites data:

TABLE 2.
RANGE AND AVERAGE COPPER CONTENT IN VARIOUS ROCKS

Rock Type	Copper Content (ppm) Reported Range	Copper Content (ppm) Average
Igneous rocks:		
Ultramafic	-	15
Basaltic & gabbroic	30-160	90
Andesitic	-	35
Granitic	5-30	15
Sedimentary rocks:		
Limestones	-	4
Sandstones	10-20	(?) 10
Shales & clays	18-120	45
Soils	2-100	20
Phosphorites	10-100	30
Coals	2-40	15

Source: Cox, et al., 1973; "Copper", in D. A. Brobst and W. P. Pratt (editors), U.S. Mineral Resources, (USGPO), pp. 163-190.

Indeed, as mentioned in a footnote in the main text, a "grab sample" of soil from the Capitol had copper levels far in excess of the majority of the NPL sites

United States Bureau of Mines Comments

As noted in the main text, the Bureau of Mines has completed an analysis of the "Section 301" studies. Their conclusions generally parallel those above.

With respect to the adequacy of the EPA data bank, the Bureau of Mines commented as follows,

> "Because of a very limited and poor data base on the expenditure experience of the Fund with respect to copper and lead metal and zinc oxide, the EPA conclusions drawn from such data are suspect. The EPA data base cannot be used to determine the following critical components of a comprehensive Fund experience study, which was called for in the Act:
>
> > (a) whether copper metal, zinc oxide and associated substances were present at the 538 NPL sites at toxic levels. Though an attempt was made to estimate the toxicity level for lead and 5 associated substances using National Interim Drinking Water Standards, no such criteria were applied to copper or zinc oxide; and
> >
> > (b) the proportional shares of past and future site cleanup costs, if any, that are directly attributable to contamination by the production activities involving lead metal, copper metal, and zinc oxide, derivative compounds of these metals, and other possible contaminants."

Moreover, the Bureau of Mines commented on the analysis and interpretation of the EPA data,

> "The reader must be presented with more information than 'copper, lead and zinc are among the most frequently detected substances at NPL sites and adjoining environmental media.' Additionally, inferring the possible presence of activities related to metals or their compounds by descriptions of waste sites and types of waste is tenuous for many reasons including the difficulty of determining whether the metals present were primary products or byproducts of other metal production such as gold. Additionally, lead and copper are common substances found in soil, including waste sites. Their presence, therefore, does not prove anything about the industrial source of the metal. Lastly, the assumption that past experience can be used to forecast the future is not necessarily true given the nature of the substances being analyzed.
>
> Given a maximum 4 year study time frame, a data base related to Fund experience should have been developed to adequately estimate the incremental cost contributions to each selected site of each possible contaminant, when applicable. Unfortunately, neither the site frequency data, whether defined broadly or more narrowly, appear to have been collected with this study in mind."

The Bureau of Mines noted that the EPA study did not differentiate between the Fund experience of copper, lead, and zinc oxide. Pooling of site data for these three metals ignores the fact that,

> "(1) the toxicity contributions of copper and zinc may significantly differ from that of lead; and
>
> (2) copper and zinc and related compounds were found far less often than lead in the 538 NPL sites. Copper and zinc and related compounds have been detected at only 9 and 14 percent, respectively, of the 538 updated NPL sites as compared to 30 percent for lead. Copper was not reported at the 4 sites in which remedial actions have been taken for which data are available and in only 1 of the 35 approved immediate and planned removals involving copper, lead and zinc."

In sum, the Bureau of Mines concluded that the EPA studies contained "many serious shortcomings" and "therefore, the findings cannot be accepted."

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT

1982

January	Major work force reductions and mine closures occur throughout the industry.
	Kennecott announces it lost $59 million for the last six months of 1981 — profits of other copper companies fall dramatically.
February	First Kennecott work force reduction occurs at Utah Copper Division, one of the world's largest copper operations.
March	575 positions eliminated throughout Kennecott.
	Labor reductions begin at other Kennecott operations.
May	Kennecott's Arizona and New Mexico mines curtail all operations except dump leaching and precipitating.
June	Copper prices on the Commodity Exchange (COMEX) drop to four-year low of 63.70¢, later in the month drop as low as 54.15¢ a pound.
	White Pine smelter and refinery in Michigan closed.
July	Kennecott's Utah operations continue work force reductions; now operating at full capacity with 2,000 fewer workers.
	All Kennecott salaried employees take 10% pay cut (for one full year) and are asked to give up two weeks of vacation during 1982.
August	Magma closes its Superior Division in Arizona.
September	Kennecott's New Mexico facility begins shakedown of new concentrator; smelter modification project approved.
	U. S. copper industry now operating at 66% of capacity.
November	Kennecott closes Tintic Division at Eureka, Utah.
December	Kennecott's 1982 losses total $187 million.
	Chile overtakes the United States as the leading producer of mined copper in the Western World.

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT
(continued)

1983

January	Kennecott Refining trims production rates.
	Kennecott loses $188.5 million in 1982. Other copper producers also announce big losses; Anaconda, $332 million; Phelps Dodge, $74.3 million; Asarco, $38.7 million.
February	Copper prices gradually improve, topping 75¢ a pound mark on the COMEX.
March	Ozark Lead shuts down on indefinite basis after union rejects wage and benefit reduction package.
	Additional 76 salaried positions trimmed from Kennecott's headquarters.
	Kennecott and unions agree to begin early negotiations on new copper contract.
April	Kennecott sells Tintic Division.
	Agreement reached on economic package for new labor contract.
May	Kennecott President Frank Joklik advocates tighter lending standards for foreign project loans; later incorporated as amendment of the International Financial Stability Act.
June	Kennecott's headquarters payroll reduced by 80 positions.
	Kennecott Baltimore refinery shuts down refining and anode casting operations; only rod casting continues.
	Kennecott's Nevada Smelter shuts down on an indefinite basis, due to lack of available concentrates.
July	Kennecott, unions settle local issues; new three-year contract reached without work stoppage for the first time in almost 30 years.
August	Kennecott's Arizona mine resumes mining and concentrating operations; concentrates sold to Asarco rather than running smelter.
October	Copper prices hit 1983 low at 65.80¢ a pound on the COMEX.

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT
(continued)

1984

January	Kennecott joins with other domestic copper producers seeking relief from foreign imports by filing International Trade Commission petition.
	Kennecott reduces output at the Bingham (Utah) mine by 13%, and announces a $91 million loss for 1983.
February	Kennecott's Utah Copper Division and headquarters reduce another 500 positions.
	Phelps Dodge loses $63.5 million in 1983; Duval loses $30.9 million; Magma reports loss of $28.4 million; Asarco reports $58.5 million profit.
May	Kennecott requests reopening of labor contracts; Inspiration and Magma follow Kennecott's lead.
June	Kennecott announces it will trim production by 2/3 and lay off 2,000 workers at Utah Copper Division unless labor costs can be reduced.
July	Unions decline to negotiate reductions in labor costs; UCD production cut and work force reduced by 1,800.
	Copper prices drop to 57.70¢ a pound on the COMEX.
September	President Reagan rejects ITC's recommendation for aid to the domestic copper industry.
	Arco announces one-time $785 million write-down of Anaconda assets.
	Kennecott's Chino, New Mexico operation begins change over to new smelting process.
October	Kennecott reports third quarter loss of $41 million, bringing nine-month 1984 losses to $106 million.
	Omnibus Trade Bill including a rider urging the Administration to negotiate with foreign copper producers passed by Congress and signed by the President.
December	Further reductions in fringe benefits announced for salaried employees of Kennecott.

TABLE A-1.
SELECTED CHRONOLOGY OF EVENTS IN THE DOMESTIC COPPER INDUSTRY WITH EMPHASIS ON KENNECOTT
(continued)

December (continued)	Asarco announces major cuts in headquaters staff.
	Copper prices drop to the 55-56¢ range on the COMEX.
	Kennecott, unions agree to meet in Albuquerque beginning January 14, 1985, to discuss ways of reducing operating costs.
	Phelps Dodge closes Morenci smelter.
1985	
January	Kennecott reduces work force at the Utah Copper Division by 100 employees effective January 6.
	Echo Bay takes over Copper Range, future of White Pine operations doubtful.
	Standard Oil of Indiana announces plan to a spin-off the metals, industrial minerals, and coal operations of its AMOCO Minerals subsidiary. Labor cost-cutting talks collapse.
February	Phelps Dodge enters into a letter of intent with Sumitomo for the possible sale of "a significant minority interest" in the Morenci copper mining property.
	Phelps Dodge and Asarco announce $269 million and $306 million losses respectively for 1984.
March	Senator Pete Domenici and Representative Morris Udall introduce complimentary bills called the "National Copper Policy Act of 1985" designed to bring voluntary production restraint negotiations with foreign copper-producing countries — no action to date on this bill.
	Senators Domenici and Garn introduced a resolution to terminate the Compensatory Financing Facility of the IMF.
	Asarco permanently halts smelting operations at its Tacoma, Washington, smelter.
	Phelps Dodge suspends operations at its Ajo, Arizona, smelter.
	Kennecott announces the indefinite suspension of operations at its Utah facilities — one of the world's largest. Nearly 8,000 in total have been laid off at this facility.
April	Slight rise in COMEX prices.
	Congressman Kolbe introduces Domenici/Garn resolution in the House.

TABLE A-2.
DOMESTIC COPPER MINES CURRENTLY CLOSED OR CURTAILED

Property	Owner	Tons/Year Capacity	Date Shut Down
Carr Fork	Anaconda	25,000	Dec. 1981
Esperanza	Duval	20,000	Dec. 1981
Mineral Park	Duval	15,000	Dec. 1981
Christmas	Inspiration	10,000	Jan. 1982
Continental	Sharon Steel	20,000	Jan. 1982
Ray	Kennecott	40,000	Apr. 1982
Copper Flat	Quintana	15,000	Jul. 1982
Superior	Magma	30,000	Aug. 1983
White Pine	Copper Range	45,000	Oct. 1982
Bluebird	Ranchers	7,000	Oct. 1982
Pima	Cyprus	43,000	Oct. 1982
Twin Buttes	Anamax	110,000	Feb. 1983
Berkley	Anaconda	80,000	Jul. 1983
Sacaton	Asarco	20,000	Mar. 1984
Utah	Kennecott	180,000	Mar. 1985
Ajo	Phelps Dodge	38,000	Aug. 1984
Silver Bell	Asarco	20,000	Aug. 1984
TOTAL		718,000	

STATEMENT OF RICHARD H. BAUER, VICE PRESIDENT, EASTERN ALLOYS, MAYBROOK, NY AND MEMBER OF THE WASHINGTON CONFERENCE FOR ZINC, INC., WASHINGTON, DC

The CHAIRMAN. Next we will take Mr. Bauer.

Mr. BAUER. Thank you, Mr. Chairman.

I am Richard H. Bauer, vice president of Eastern Alloys in Maybrook, NY and a member of the Washington Conference for Zinc, with its offices at 900 17th Street NW, suite 504, in Washington, DC.

The Washington Conference for Zinc was established in May 1984 as a result of a meeting in Washington on the Superfund reauthorization legislation. Over 250 zinc companies, including United States and foreign producers, independent alloyers, diecasters, hot dip galvanizers and other suppliers of zinc participate in the activities of the conference.

The Washington Conference for Zinc is testifying today to respectfully request that the Finance Committee continue to exclude zinc from the Superfund taxing formula.

Zinc is a critical and versatile mineral, ranking fourth in metal production following steel, copper, and aluminum. The zinc industry exerts worldwide influence in mining, smelting and trade. The zinc industry operations consist of mining, smelting, alloying, die casting, brass and bronze production, galvanizing, and zinc dust production. Each of these segments provides employment for thousands of Americans and results in consumer items ranging from automobile parts and eyeglass frames to firehose couplings, computer components, auto tires, and vitamins.

The Washington Conference for Zinc firmly believes that the inclusion of zinc as a hazardous substance in any Superfund tax, including a feedstock tax or a waste-end tax, would have grave consequences on the zinc industry, with repercussions felt in many consumer products industries. Zinc is not a toxic substance. It should not be categorized with those materials that pose a chronic health hazard at Superfund sites.

The zinc industry is not a contributor to the Superfund problem and it should not be held responsible for the funding of hazardous waste cleanup.

Zinc's nontoxicity is reflected in the Superfund legislation which has been offered by Senate Members of both parties as well as by the administration. Senator Robert T. Stafford, chairman of the Senate Environment and Public Works Committee has introduced in the Congressional Record a revenue amendment to fund a $7.5 billion Superfund reauthorization. The Stafford proposal does not include zinc in its feedstock tax. Similarly, Senator Bill Bradley, a member of this committee, has introduced S. 596, a Superfund reauthorization funding proposal. The Bradley bill does not propose to tax zinc.

The administration has also offered its Superfund reauthorization proposal. Based on EPA's recommendation, the administration's $5 billion Superfund reauthorization bill did not add zinc as a component of the feedstock tax.

Last year, the Washington Conference for Zinc testified before this committee on the effects the feedstock tax would have on the domestic zinc industry. The conference talked about the effects that a tax of a penny a pound would have on the zinc industry's ability to remain competitive.

The circumstances of the industry have not changed appreciably since we have last appeared before you except that the price structure weakened and the imposition of a tax on zinc would be even more burdensome.

Closely related to economic disadvantage that a tax on zinc would create is a marketing disadvantage that would be created if zinc is put under the hazardous substance umbrella of Superfund and declared toxic.

In January of this year——

The **CHAIRMAN**. I will have to ask you to wind down, sir.

Mr. **BAUER**. In January of this year, the Washington Conference for Zinc commissioned a report done by a Dr. Heinken whose credentials are very impressive. I would like to submit that report for the record, if I could, please.

The **CHAIRMAN**. That will be in the record.

[The report from Mr. Bauer follows:]

ZINC TOXICITY IN HUMANS

Zinc in the environment: Zinc is a moderately abundant element with a concentration in the continental crust of the earth of 50-70 ppm which places it 24th in abundance among the chemical elements. There are more than 80 zinc minerals known but the principal commercial ones are few, mainly sulfides, sphalerite and wurzite (cubic and hexagonal ZnS) and their weathering products, primarily carbonates and oxides.

Normal soils contain 10-300 ppm zinc, Soils near major highways contain more zinc probably as a result of zinc deposited from wearing of tires (from zinc oxide) and emmissions from motor oil to which zinc dithiophosphite has been added. In these areas at a distance of 8 meters from a major road zinc on the soil surface can reach 170 ppm and in the same areas, at a depth of 15 cm, the concentration can be as high as 72 ppm.

Zinc is a very active substance and is commonly found in the presence of organic matter. Some of these zinc compounds are insoluble, some soluble. Soluble zinc-organic complexes can leach through soil to influence weathering and geochemical distribution. Some soluble zinc-organic complexes are so stable that the zinc is essentially unavailable to living systems although these extremely stable complexes are rare.

There are two main groups of organic compounds that form stable compounds with zinc in soil, one group involving organic acids, peptides, proteins and polysaccharides, the second, humic and fulvic acids. Most of the insoluble zinc-organic complexes are commonly associated with humic acid.

Zinc is also found in various bodies of waters. In seawater, zinc varies from 1-27 ppb (mediam 8 ppb, 8ug/L). About 700,000 metric tons of zinc are estimated to be transported to the sea annually with 99.9% of this total reaching the seas in the dissolved form and eventually precipitated with oceanic sediments, mainly clay minerals. Zinc content in fresh waters is more variable but a value of 10 ppb (10 ug/L), is a reasonable approximation. High concentrations of zinc in surface waters reflect industrial and urban pollution from sources such as galvanized pipes and dumpings of plating baths. Streams from mining areas have contained as much as 21 mg/L (21,000 ppb). However, waters of such streams tend to purify themselves by precipitating zinc with clay sediments or with hydrous iron and manganese oxides. Such precipitation can affect 1,000-10,000 ppm (100,000 ppb) zinc which is sufficient to purify most contaminated streams.

Zinc is a component of coal varying from 7-300 ppm. With coal burning, zinc is released into the atmosphere and with precipitation it will be deposited in soil. Zinc in petroleum varies from 0.2-4 ppm.

In this sense there is a natural life cycle of zinc in soil, water and air. A natural equilibrium has been in existence from time immemorial by which zinc passes from one system to the other. The equilibrium of this natural environmental ecosystem is the major manner by which zinc is distributed in the environment. By and large, the equilibrium of this system favors the precipitation of zinc in the earth's crust.

Man-made zinc sources in the U.S.: There were about 30 mines and smelters in which zinc was produced in the U.S. in 1974. This number has decreased in recent years. Zinc is mined primarily as sphalerate (ZnS), then crushed in mills and concentrated by differential floatation. Based upon 1973 figures the total zinc emmission to the atmosphere from all mining and smelting in the U.S. has been estimated at 43.5 metric tons, the total mined and milled being 435,318 metric tons. The amount of zinc released into the environment from mining compared to that from natural processes is trivial. In specific areas near zinc smelters, however, zinc in soils can be quite high; within 1 km of one smelter zinc in soil in the upper 15 cm was 50-80,000 ppm with organic matter containing as much as 135,000 ppm. The concentration of zinc falls off sharply as the distance from plants increase.

Smelting of zinc generally involves a roasting procedure which draws off sulfur dioxide (SO_2) and converts the zinc sulfide (ZnS) to zinc oxide (ZnO). Roasting can create large amounts of dust but because the operation is usually enclosed the dust can and is collected and disposed of. Particulate collecting devices, primarily baghouses and electrostatic precipitators, are highly efficient (>95%) in recovering zinc particulates. Some emmission sources are uncontrolled, usually associated with concentrate unloading, handling and storage. Zinc can also be produced when other metals are refined, primarily lead, copper and steel. However, in each of these cases, as in the smelting of zinc itself, even if given off into the environment, zinc is confined to the limited areas near the smelters.

Recycled zinc is an important source of zinc in the U.S. Approximately 20% of the total U.S. zinc production is from these sources (zinc scrap). Airborne emmissions from this source was estimated to range from 5 g - 62 kg/metric tons of product.

One of the major zinc products in the U.S. is zinc oxide. In 1974, 228,356 metric tons of zinc oxide was produced in the U.S. approximately half that mined or milled.

In order to estimate zinc concentrations in an urban environment to assess air levels, air in several urban centers was sampled with yearly averages varying from <0.01-1.6 ug/m^3, the highest figure near Bridgeport, CT. Most zinc particulates in air are released as fall out from precipitation and have been measured as run off in several major metropolitan areas; average values were 0.34 kg/curb mile.

Zinc in sewage is another common zinc source. Primary effluents given in one study was 0.83 ppm and most values are less than 1.0 ppm. In digested sewage sludge zinc content ranged from 500-50,000 ppm.

These studies indicate that zinc is a persistent constituent of almost all effluents but its concentration is generally low except in limited local areas where it is mined or smelted or concentrated in digested sewage sludge.

Zinc in humans: Zinc is an essential substance for humans. Without zinc, human life is not possible. Zinc is the fourth most common element (not trace element) in the human brain behind sodium, potassium and magnesium. It is a component of many key enzymes in several organ systems which are necessary for life; DNA polymerase and ribonuclease are both zinc dependent enzymes and without adequate stores of zinc protein synthesis cannot procede normally. Zinc is found in the human body most prevalently in muscle (65%) and in bone (25%) with about 5% in liver. Its primary function in either muscle or bone is still unknown.

Zinc is not synthesized in the body. It is an essential nutrient which can only be obtained through oral intake, absorption through the lungs being trivial except in very unusual circumstances. The U.S. government has fixed a recommended daily dietary allowance (RDA) for zinc in order to ensure the health of the U.S. population; this has been fixed for adults at 15 mg/day with slight increases for pregnant and nursing mothers and slight decreases for children and adolescents. Zinc absorption varies from 40-80% in normal subjects, is decreased with food intake to 10-30% and may vary with several disease states. Zinc deficiency, marginal or overt is a major medical problem in the U.S. with estimates of four million people suffering with this problem with diverse manifestations such as short stature, altered taste and smell function, impaired appetite, various skin lesions and infertility. Zinc has recently become one of the more common additives to vitamin and mineral preparations sold by drug companies, the amount varying on a daily basis, as a supplement, from 10-22 mg/day. As noted above, oral zinc intake can be decreased by addition of food, but also by specific components of foods including phytate and other fiber substances contained in bran.

These results indicate that humans cannot survive without the daily intake of adequate amount of zinc in the diet.

Zinc toxicity in humans: Zinc is not very toxic in humans. There are sparse reports of accidental exposure to food or drink accidently contaminated with high levels of zinc which mainly result in the acute onset of gastrointestinal distress with nausea, vomiting and diarrhea. There are less well-documented reports of a more global effect of oral ingestion of large amounts of zinc associated with drowsiness, fatigue and headaches. In a few reports very large amounts of zinc were ingested by children who developed lethargy and, on occasion, coma, the specific relationship to zinc correlated with elevated blood zinc levels. Occasionally, in the past, hemodialysis using galvanized tanks has been associated with nausea, vomiting and fever, associated with elemented plasma and red blood cell zinc levels. Discontinuation of the use of galvanized tanks has caused this problem to disappear.

Metal fume fever is an acute disability of short duration that occurs when fumes are inhaled from metal heated to a temperature above its melting point. This disorder has been most commonly associated with the inhalation of zinc oxide fumes but it may occur following inhalation of fumes of other metals including magnesium, iron and copper. However, metal fume fever is most severe among brass workers, the symptoms more severe the higher the proportion of zinc. Clinical effects are rapid breathing, shivering with fever, profuse sweating, pain in the chest, and generalized weakness. Effects usually occur in "attacks" which last 24-48 hours and are accompanied by an increase in white blood cells. A second or further exposure to the metallic fumes within 48 hours of the first exposure usually produces little or no effect. However, if the second exposure occurs after 48 hours, an attack is likely; after daily exposure, workers do not become ill again, suggesting an "immunity" to the effect.

Recently in some studies oral intake of large amounts of zinc has been associated with decrease of serum copper concentration although more careful studies in humans suggest that copper balance is unaffected. Some studies have implicated the intake of large amounts of zinc with an increase in blood levels of low density lipoproteins (LDL) a substance associated with the propensity to increase the incidence of cardiovascular disease in humans.

Zinc in humans has not been shown to be carcinogenic, teratogenic or mutagenic. Zinc has been closely linked to cadmium and small amounts of cadmium may coexist in zinc sources. It is possible that some of the toxic effects attributed to zinc may relate, in part, to the effects of cadmium. In general, however, adverse effects of cadmium can be reduced by increasing zinc intake, a phenomenon studied extensively in animals.

Zinc toxicity as related to other recycled metals known to be toxic to humans: It is well known that lead and copper can produce toxic effects in humans. However, the above discussion indicates that zinc is, in a general sense, a non-toxic metal; indeed, results in the U.S. suggest that marginal deficiency of the metal is relatively common, so much so that many drug companies have added zinc to their vitamin preparations as a dietary supplement.

However, the U.S. government has seen fit to label zinc as a toxic substance. The inclusion of this metal as a toxic substance was based upon a EPA study of the applicability of a Superfund tax to a specific metal industry based upon a set of five toxicity criteria used to select metals that "should be taxed."

These criteria are as follows and appear in the final report from the Office of Solid Waste and Emergency Response. U.S. EPA entitled "Impact of taxing copper, lead, zinc oxide, fertilizer, feedstocks, coal derived substances and recycled metal criteria, section 301(a)(1)(H/1) Studies":

(1) The raw material is hazardous in some form (e.g., raw material, intermediate, or final product);
(2) The raw material is hazardous if spilled;
(3) Hazardous waste is generated in the production of the raw material, its intermediate, or final products;
(4) Some form of the raw material is capable of increasing the hazard potential of other substances; and
(5) The raw material is produced in large amounts.

A metal needs to satisfy three of the five criteria to be considered eligible for Superfund taxation. "Three of the five metals that satisfied the taxable quantity and tax/price ratio criteria also satisfied at least three of the toxicity criteria: copper, lead, and zinc. Each of these metals was determined to satisfy the first, second, third and fifth criteria."

These criteria may not accurately reflect whether or not a metal is toxic and in this sense, cannot be considered as specific requirements by which toxicity can be determined. The criteria are quite general and ambiguous.

Criteria (5) relates to toxicity only if the raw material is produced in large quantities. There are many substances which are produced in large quantities which are not toxic, e.g., lumber, glass, paper, and there are also substances produced in very small quantities which are highly toxic and need to be controlled, e.g., botulism toxins produced in the improper preparation of some food samples, cyanide gas, some chlorinated hydrocarbons. Thus, this criterion is not definitive in describing a toxic raw or processed material.

Criteria (1) and (3) are redundant. In most, if not all cases, if criteria (1) were satisfied, criteria (3) would also be satisfied. In this sense for one problem two criteria are set up which increases the probability of obtaining a toxic effect whether or not one existed.

Analysis of the criteria indicate that there are only three "toxicity" criteria (1+3), (2) and (4), the fifth criteria unrelated to toxicity per se. To assume that satisfaction of three of five criteria is associated with toxicity assumes that each of these criteria are independent and that each is valid in describing toxic effects. Such is not the case. On the other hand, substances which are generally considered as nontoxic can conceivably be considered toxic using these criteria. For example, water or ordinary table salt could be considered hazardous since their use would satisfy three of the five criteria. Although this was obviously not the intent of the framers of this documents and, with the knowledge that some criteria were necessary upon which to establish a basis for toxicity, the criteria chosen leave much to be desired. They are not independent criteria but highly correlated. One criterion (5) does not directly relate to toxicity per se, at all. The establishment of the satisfaction of three of five criteria to define toxicity appears to be arbitrary with no definitive data given to support the concept that with three criteria "satisfied" toxicity could be clearly "established."

However, even considering these flawed criteria of 1-4 (5 cannot be seriously considered), zinc can at best satisfy only criteria (1) and (3), and since these are redundant, it can be considered to satisfy one major criteria, and this rather barely. Zinc is not very hazardous in any form although its ingestion can produce acute toxic effects and, in this sense, could be considered hazardous, satisfying (1) and with (1), (3) can be considered satisfied since zinc in several forms can produce acute toxic effects (although in several forms it is not toxic and it must be ingested in rather large quantities prior to the onset of any acute effects as noted above). The amount of zinc "spilled" by humans is, in reality, insignificant in relation to the large amount of zinc in the environmental ecosystem which is naturally recycled from air to water to land. Criterion (4) is not applicable to zinc since ingestion of zinc is commonly protective, decreasing the hazard potential of other substances, particularly cadmium and possibly, in some special situations, copper. Thus, at best, criteria (1) and (3) can be considered to be satisfied and at that the term "toxic" may be considered misapplied since only acute, not chronic, effects are usually observed, a situation quite different from that for lead.

Based upon careful analysis of the effects of zinc in humans, efforts have been made to increase the daily zinc content rather than to lower it. Marginal or overt zinc deficiencies are common problems affecting many people in the U.S. producing disease and manifestations of impaired well being. Rather than consideration of zinc as a hazardous toxic substance, we may best be served in considering acceptable and economic ways to increase the content of zinc in the U.S. diet in order to obtain the maximum benefit from this vital trace element.

Robert I. Henkin, M.D., PhD
Director, Center for Molecular
  Nutrition and Sensory Disorders
Georgetown University Medical Center
Washington, D.C. 20007

Original signed copy located at the Washington Conference For Zinc, 900 17th Street, N.W., Suite 504, Washington, D.C. 20006

Mr. **Bauer**. And just in summary, in 1980, zinc except for two specific compounds was excluded from the Superfund tax. In fact, Congress has never included zinc in any environmental legislation on the basis of its effects on human health. The Washington Conference for Zinc respectfully asks this committee to maintain this practice and continue to exclude zinc from any Superfund reauthorization.

Thank you very much.

The **Chairman**. Thank you.

[The prepared written statement of Mr. Bauer follows:]

Washington Conference For Zinc, Inc.
900 17th Street, N.W.
Suite 504
Washington, D.C. 20006
(202) 785-0550

I am R. H. Bauer, Vice President of Eastern Alloys, Maybrook, New York, and a member of the Washington Conference For Zinc Inc. with its offices at 900 17th Street N.W., Suite 504, Washington, D.C. 20006.

The Washington Conference For Zinc was established in May 1984 as a result of a meeting in Washington on the Superfund reauthorization legislation. Over 250 zinc companies, including U.S. and foreign producers, independent alloyers, die casters, hot dip galvanizers, and other suppliers of zinc participate in the activities of the Conference.

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Zinc is a critical and versatile mineral, ranking fourth in metal production following steel, copper, and aluminum. The zinc industry exerts worldwide influence in mining, smelting and trade. Zinc industry operations consist of mining, smelting, alloying, die casting, brass and bronze production, galvanizing, and zinc dust production. Each of these segments provides employment for thousands of Americans and results in consumer items ranging from automobile parts and eyeglass frames to firehose couplings, computer components, auto tires, and vitamins.

The Washington Conference For Zinc firmly believes that the inclusion of zinc as a hazardous substance in any Superfund tax, including a feedstock tax or a waste-end tax would have grave consequences on the zinc industry with repercussions felt in many consumer product industries.

Zinc is not a toxic substance. It should not be categorized with those materials that pose a chronic health hazard at Superfund sites. The zinc industry is not a contributor to the Superfund problem, and it should not be held responsible for the funding of hazardous waste cleanup.

Zinc's nontoxicity is reflected in the Superfund legislation which has been offered by Senate members of both parties as well as by the Administration. Senator Robert T. Stafford, Chairman of the Senate Environment and Public Works Committee, has introduced in the Congressional Record a revenue amendment to fund a $7.5 billion Superfund reauthorization. The Stafford proposal does not include zinc in its feedstock tax.

Similarly, Senator Bill Bradley, a member of this committee, has introduced S 596, a Superfund reauthorization funding proposal. The Bradley bill does not propose to tax zinc.

The Administration has offered its Superfund reauthorization proposal. Based on EPA's recommendations, the Administration's $5 billion Superfund reauthorization bill did not add zinc as a component of the feedstock tax.

LAST YEAR THE WASHINGTON CONFERENCE FOR ZINC TESTIFIED BEFORE THIS COMMITTEE ON THE EFFECTS THE FEEDSTOCK TAX WOULD HAVE ON THE DOMESTIC ZINC INDUSTRY. THE CONFERENCE TALKED ABOUT THE EFFECTS THAT A TAX OF A PENNY A POUND WOULD HAVE ON THE ZINC INDUSTRY'S ABILITY TO REMAIN COMPETITIVE. THE CIRCUMSTANCES OF THE INDUSTRY HAVE NOT CHANGED APPRECIABLY SINCE WE LAST APPEARED BEFORE YOU, EXCEPT THAT THE PRICE STRUCTURE WEAKENED AND THE IMPOSITION OF A TAX ON ZINC WOULD BE EVEN MORE BURDENSOME.

CLOSELY RELATED TO THE ECONOMIC DISADVANTAGE THAT A TAX ON ZINC WOULD CREATE IS A MARKETING DISADVANTAGE THAT WOULD BE CREATED IF ZINC IS PUT UNDER THE HAZARDOUS SUBSTANCE UMBRELLA OF SUPERFUND AND DECLARED TOXIC.

IF ZINC IS DECLARED HAZARDOUS AND TOXIC IN THE SUPERFUND REAUTHORIZATION, CONSUMERS WILL NOT BE AS READY TO BUY PRODUCTS CONTAINING ZINC. ADDITIONALLY, THE U.S. MINT WOULD BE CIRCULATING HAZARDOUS MATERIAL IN THE ZINC PENNY WHICH CONTAINS 98% ZINC.

IN JANUARY OF THIS YEAR, THE WASHINGTON CONFERENCE FOR ZINC COMMISSIONED A REPORT ON THE TOXICITY OF ZINC AND ITS EFFECT ON HEALTH AND THE ENVIRONMENT. THE CONFERENCE ASKED DR. ROBERT I. HENKIN, ONE OF THE FOREMOST AUTHORITIES ON ZINC, TO PREPARE THE REPORT. DR. HENKIN'S CREDENTIALS ARE IMPRESSIVE. HE IS CURRENTLY THE DIRECTOR OF THE CENTER FOR MOLECULAR NUTRITION AND SENSORY DISORDERS AT GEORGETOWN UNIVERSITY MEDICAL CENTER; HE WAS CHAIRMAN

OF THE NATIONAL ACADEMY OF SCIENCE'S PANEL WHICH STUDIES THE AFFECTS OF ZINC, AND THE PANELS PUBLISHED WORK IS USED EXTENSIVELY BY EPA. DR. HENKIN HAS PRODUCED A BALANCED REPORT THAT EXAMINES ALL ASPECTS OF ZINC IN THE ENVIRONMENT AND ITS EFFECT ON HUMAN HEALTH.

THE HENKIN REPORT STATES THAT ZINC IS NOT A TOXIC METAL; IT HAS SHOWN TO BE NOT CARCINOGENIC, TERATOGENIC OR MUTOGENIC. DR. HENKIN INFORMS US THAT ZINC IS THE FOURTH MOST COMMON ELEMENT IN THE HUMAN BRAIN AND IS A COMPONENT OF DNA. THE UNITED STATES DEPARTMENT OF AGRICULTURE HAS ESTABLISHED A MINIMUM REQUIREMENT FOR ZINC OF 15 MILIGRAMS A DAY. THIS AMOUNT IS NEEDED BY ALL OF US IN ORDER TO MAINTAIN GOOD HEALTH. DR. HENKIN REPORTS THAT FOUR MILLION AMERICANS SUFFER FROM ZINC DEFICIENCY WHICH MANIFESTS ITSELF BY SYMPTOMS SUCH AS ALTERED TASTE AND SMELL, IMPAIRED APPETITE, SKIN LESIONS, AND EVEN LOSS OF FERTILITY.

THE HENKIN REPORT CONCLUDES THAT WITHOUT ZINC, HUMAN LIFE IS NOT POSSIBLE.

DR. HENKIN ALSO TAKES ISSUE WITH THE CRITERIA WHICH THE HOUSE OF REPRESENTATIVES AND THE EPA HAVE USED IN THE PAST IN CRITICIZING ZINC'S EFFECT ON THE ENVIRONMENT.

WITH THE COMMITTEE'S PERMISSION, I WOULD LIKE TO INTRODUCE DR. HENKIN'S REPORT INTO THE RECORD. WE ALSO WILL BE ADVISING THE APPROPRIATE HOUSE COMMITTEES AND THE ENVIRONMENTAL PROTECTION AGENCY OF THE REPORT.

IN 1980, ZINC, EXCEPT FOR TWO SPECIFIC COMPOUNDS, WAS EXCLUDED FROM THE SUPERFUND TAX. IN FACT, CONGRESS HAS NEVER INCLUDED ZINC IN ANY ENVIRONMENTAL LEGISLATION ON THE BASIS OF ITS EFFECTS ON HUMAN HEALTH. THE WASHINGTON CONFERENCE FOR ZINC RESPECTFULLY ASKS THIS COMMITTEE TO MAINTAIN THIS PRACTICE AND CONTINUE TO EXCLUDE ZINC FROM ANY SUPERFUND REAUTHORIZATION.

THANK YOU FOR THE OPPORTUNITY TO PRESENT THIS TESTIMONY.

STATEMENT OF EDWARD G. TAYLOR, PRESIDENT, DANIEL BATTERY MANUFACTURING CO., BATON ROUGE, LA, AND PRESIDENT, BATTERY COUNCIL INTERNATIONAL, WASHINGTON

The **Chairman**. Mr. Taylor.

Mr. **Taylor**. Mr. Chairman, I'm Edward G. Taylor, president of the Battery Council International. And it is on their behalf that I speak today. I'm also president of Daniel Battery Manufacturing Co. of Baton Rouge, LA.

In 1984, the battery industry used approximately 922,000 tons of lead to make automotive and industrial batteries. This is about 70 percent of all lead used in this country. Our industry paid about $1.5 million into the Superfund tax on lead oxide. I would like to make several points about this tax and about some of the proposals which have been made to modify or extend it.

We support the position expressed recently by Senator Bentsen and other members of this committee that existing feedstock tax cannot be raised further without damaging the industries which produce petrochemicals and feedstocks or those industries, like our own, which pay the tax as an intermediate user.

If the revenues flowing into the Superfund need to be increased, other sources of revenue should be found. We believe that a broad based manufacturers' tax, such as proposed by Senators Bentsen and Wallop or an environmental tax on corporate earnings and profits, such as proposed by Senators Mitchell and Chafee, is your most equitable way to fund any expended environmental response fund.

We would also support continuation of the funding from general revenues. Second, we believe it is critical to recognize that the battery industry is an industry which recycles. Bureau of Mines' figures show that the lead recovered from batteries over the last 3 years equals more than 55 percent of all lead used to make new batteries in those years.

We suggest that any tax paid by the industry should be reduced or rebated to the extent that industry recycles lead in the most recent year. Either the tax rate should be reduced to reflect this recycling or a credit should be made at the end of the year to the party who paid the tax.

We must be careful not to penalize recycling through the waste-end tax. If a waste-end tax is to be included in the extended Superfund, it should not be a major component of revenue for a waste-end tax could encourage improper disposal.

Further, we believe that it would be a mistake to impose a tax on treatment of a hazardous waste. Used batteries, as delivered to a secondary smelter, are hazardous waste under the definitions of section 3001 of RCRA. The secondary smelters which recycle these batteries are RCRA permitted facilities. The consequence is that under the language and definitions currently in the administration's bill or Senator Mitchell's bill a secondary smelter would pay the waste management tax on the batteries it receives to recycle.

We ask that Congress address the economic incentive for importation of batteries manufactured overseas. Imports of automobile and motorcycle replacement batteries reached 6.6 million units in

1984. And another 2.5 million units were imported in foreign automobiles.

Imported products which contain tax feedstocks should bear an equal tax. It is, for example, very easy to determine the weight of lead oxide in an imported battery.

And we thank you, Mr. Chairman, for your attention and we will be glad to provide other assistance as needed.

The CHAIRMAN. Thank you, sir.

[The prepared statement of Mr. Taylor follows:]

Battery
Council
International
WASHINGTON OFFICE
1101 CONNECTICUT AVENUE, N.W. • WASHINGTON, D.C. 20036

Statement of Edward G. Taylor
President of the Battery Council International
Before the Senate Finance Committee
On the Tax Aspects of Superfund Extension
April 26, 1985

Mr. Chairman, I am Edward G. Taylor, President of the Battery Council International and of Daniell Battery Manufacturing Company of Baton Rouge, Louisiana. The Battery Council represents about 98 percent of U.S. production of automotive and industrial lead-acid storage batteries. These firms include both large multi-plant producers and smaller, independent firms such as Daniell Battery.

In 1984, the battery industry used approximately 922,000 tons of lead to make automotive and industrial batteries. This is about 70 percent of all lead used in this country. About 40 percent of the lead we use is in the form of battery oxide, and our industry paid about $1.5 million in the Superfund tax on the lead oxide content of this battery oxide.

I should emphasize that we, the using industry, pay this tax. It is not paid by outside producers of lead oxide, it is paid by the lead-acid battery manufacturing industry. Many of the larger firms manufacture lead oxide on site, using it immediately to make batteries. There are other manufacturers, both large and small, who buy lead oxide from other firms and who usually find the tax added to their invoice just like an excise tax. We pay the lead oxide manufacturer, who acts like a collection agency and sends the tax on to the Treasury.

I would like to make several points about this tax and about some of the proposals which have been made to modify or extend it.

First, we believe this is already a significant tax on us as a using industry. The battery industry has not, as a whole, been profitable for the last five years. A number of plants have been closed and several of the large battery firms have been sold or are currently for sale by parent corporations who do not find battery manufacturing an adequate profit center.

The industry is also in the midst of extremely large expenditures needed to continue reducing air and water emissions from our plants and to assure that our employees are protected from hazardous workplace exposure. We are proud of the progress we have made in these areas.

In this context, we support the position expressed recently by Senator Bentsen and other members of this commitee, that the existing feedstock tax cannot be raised further without damaging the industries which produce petrochemicals and feedstocks or those industries, like our own, which pay the tax as the immediate user. If the revenues flowing into the Superfund need to be increased, other sources of revenue should be found.

We, believe, therefore, that a broad-based manufacturers tax, such as proposed by Senator Bentsen, or an environmental tax on corporate earnings and profits, such as proposed by Senators Mitchell and Chafee, is the most equitable way to fund any expanded Environmental Response fund. The economic benefits of the use of lead-acid batteries are board. This includes the consumer who needs a lead-acid battery to start his car; the many industries which use battery-driven fork-lift trucks; the electric utilities which use giant batteries for load-levelling; the communications and other firms which use lead-acid batteries for emergency power; and the many customers of these utilities, manufacturing, and communications firms. For this same reason, we would also support continuation of partial funding from general revenues.

Second, we believe it is critical to recognize that the battery industry is an industry which recycles. Federal policy should support, not penalize, this recycling. Bureau of Mines figures show that the lead recovered from batteries over the last three years equals more than 55 percent of all the lead used to make new batteries in those years. Recycling is environmentally sound. The battery which goes to a secondary smelter for recycling does not, obviously, end up on a municipal waste site or at the bottom of a local stream.

How can this environmentally sound recycling be encouraged? First, we suggest that any tax paid by the industry should be reduced or rebated to the extent that the industry, according to Bureau of Mines figures, recycled lead in the most recent year. Either the tax rate should be reduced to reflect this or a credit should be made at the end of the year to the party which paid the tax.

BEST COPY AVAILABLE

Second, we must be careful not to penalize recycling through the waste end tax. We would support a waste end tax on land disposal of hazardous waste as part of the revenue stream for the Superfund. This could be an appropriate part of the total revenue mix. However, we believe that difficulties of enforcing this tax suggest it should not be a large component of total revenues. Too large a waste end tax could, unfortunately discourage proper disposal.

Further, we believe it would be a mistake to impose a tax on treatment of hazardous wastes. I mentioned that more than half of the lead used in batteries is recycled from used batteries. These used batteries, as delivered to a secondary smelter, are "hazardous waste" under the definitions of Section 3001 of RCRA. In recognition of the industry's record in handling these batteries safely, EPA has exempted them from the hazardous waste handling requirements; but they fall under this definition. And the secondary smelters which recycle these batteries are RCRA permitted facilities. The consequence is that, under the language and definitions currently in the Administration bill or Senator Mitchell's bill, a secondary smelter would pay the waste management tax on the batteries it receives. Obviously, the value of the battery to a smelter has to be enough to cover the costs of handling and delivery of that used battery to the smelter, plus an incentive to the service station or other retailer to return the battery. A waste management tax which taxed recycling would have the perverse effect of promoting just what we should be trying to avoid -- the unmanaged or improper disposal of used batteries at municipal dump sites or in the environment.

And third, we ask that Congress address the economic incentives for importation of batteries manufactured overseas. Imports of automotive and motorcycle replacement batteries reached 6.6 million in 1984, another 2.5 million were imported in foreign automobiles. An imported product which contains taxed feedstock, in its original form or an easily identifiable immediate derivative, should bear an equal tax. It is, for example, very easy to determine the weight of lead oxide in an imported battery. A simplified environmental import tax equal to that paid by the domestic manufacturer would be easily administrable and would demonstrably not be a tariff or non-tariff trade barrier.

We thank you for your attention and will be glad to provide any other assistance needed.

Battery
Council
International

WASHINGTON OFFICE:
1101 CONNECTICUT AVENUE, N.W. • WASHINGTON, D.C. 20036

April 24, 1985

Recommendations of the Battery Council International on Superfund.

The Battery Council International (BCI) recommends that:

1. A broad-based manufacturers tax should be part of the Superfund tax base. This type of tax provides a more equitable spreading of the burden of the tax in relation to the nation's needs. Congress should also continue the current 12.5 percent contribution from general revenues to the fund.

2. Taxes on "feedstock" chemicals should be reduced or rebated to the party which pays the tax to the extent that the industry's products are recycled;

3. A fee should be placed on imported products made from or containing a substantial percentage of a taxable feedstock chemical which will equal the costs accruing to the domestic industry under this Act;

4. Partial funding through a "waste-end" tax on land disposal, by putting some of the tax burden on parties who dispose of hazardous wastes, is more equitable than exclusive reliance on feedstock taxes. The disposal tax should not tax treatment or recycling, which should be encouraged.

STATEMENT OF JOHN VIDMAR, EXECUTIVE VICE PRESIDENT, GENERAL WELDING SUPPLY CO., GARDENA, CA, ON BEHALF OF THE COMPRESSED GAS ASSOCIATION, INC.

The CHAIRMAN. Mr. Vidmar.

Mr. VIDMAR. Senator Packwood and honorable members of the committee, we appreciate the opportunity to testify this morning. My name is John Vidmar. I'm the executive vice president of General Welding Supply, whose acetylene generating plant is located in Gardena, CA.

I'm before you this morning representing both our company, a small business, and the Compressed Gas Association.

We are a family-owned business and we have been in business 23 years and employ approximately 100 people. My company generates acetylene which is sold in cylinders for cutting and welding uses, which are crucial to the residential construction, shipbuilding, and automotive industries, just to name a few.

Because of the massive weight per cylinder and the small payload that can be safely filled, there are few economies of scale in our business. Transportation costs limit the distance acetylene can be economically transported. This means that acetylene generating plants, like my company, are spread throughout the United States. This also means that most of these plants are independent small businesses.

The Compressed Gas Association, CGA, which has been in existence since 1913, is the chief industry association in the United States and Canada representing producers of compressed gases and cryogenic liquids, as well as equipment used in storage, transport, and delivery of such products. The CGA has, through a system of voluntary standards, made the compressed gas industry one of the safest industries in the United States. I might also note here, that in the 72 years of CGA's existence, today is the first time we have had to come to Congress to testify on a pending piece of legislation.

We have policed our own industry successfully and feel that this legislation is discriminatory toward our industry.

I'm testifying today to urge that the Superfund tax not be unjustly or unfairly imposed on acetylene when it is used in the welding and cutting industry.

The current Superfund tax focuses on chemicals that serve as building blocks of hazardous substances, whose disposal can cause environmental problems. Taxing these building blocks is thought to be an efficient way of assuring that users of these hazardous substances share the cost of cleanup. When acetylene is put into pipelines and used for chemical processes, it serves as a building block and is subject to taxation. We are not here to question the rationale of the current feedstock tax or its application to pipeline acetylene.

The acetylene that my company and others like us produces is never used as a building block for other materials. It is compressed and filled into cylinders and used as a fuel for welding and cutting. Cylinder acetylene is entirely consumed when used. Its only byproducts are carbon dioxide and water; no hazardous substances are produced.

Under current law, propane, the fuel with which acetylene primarily competes for cutting and welding uses, is not taxed at all. Butane and methane are taxed only when used as feedstocks. They are exempt from the feedstock tax when they are used as fuel.

Although cylinder acetylene is not specifically exempt from taxation it is not, for the most part, taxed because it is generated from calcium carbide, a coal derivative. And substances derived from coal are exempt from tax under section 4662 of title 16. The effect of the coal exclusion has been to provide cylinder acetylene with the same tax treatment as competing fuels, such as propane.

Unless steps are taken to continue this equal treatment, elimination of the coal exclusion coupled with a major increase in the per ton tax on acetylene would have a serious effect on the competitive position of our industry. It is not difficult to adjust most welding torches to accommodate other gases, such as propane. If cylinder acetylene is singled out for heavy taxation, our customers will simply switch to untaxed fuels. Our industry is not healthy today. Its production has declined on the average of 5 percent each year since 1980. Discriminatory taxation will surely hasten this decline, destroying many independent small businesses.

In conclusion, I would like to sum up our position. Acetylene is a fuel when used for cutting and welding in that use. It produces no toxic byproducts. The majority of the producers are independent small businesses who depend on this one product. They cannot switch to anything else. The industry is having a hard enough time competing on an even basis and they cannot carry a tax that its competitors are excluded from. We are asking only for fairness. Acetylene should not be covered by a Superfund tax. Acetylene byproducts, CO^2 and water, are not hazardous wastes.

The Compressed Gas Association and its staff will be glad to answer any questions that might arise, and supply any additional information that might be needed.

Thank you again for this time this morning.

The CHAIRMAN. Thank you.

[The prepared statement of Mr. Vidmar follows:]

STATEMENT OF JOHN VIDMAR, GENERAL WELDING SUPPLY COMPANY BEFORE SENATE FINANCE COMMITTEE

APRIL 26, 1985

SENATOR PACKWOOD AND HONORABLE MEMBERS OF THE COMMITTEE, WE APPRECIATE THE OPPORTUNITY TO TESTIFY THIS MORNING.

MY NAME IS JOHN VIDMAR, AND I AM THE EXECUTIVE VICE PRESIDENT OF GENERAL WELDING SUPPLY, WHOSE ACETYLENE GENERATING PLANT IS LOCATED IN GARDENA, CALIFORNIA. I AM BEFORE YOU THIS MORNING REPRESENTING BOTH OUR COMPANY - A SMALL BUSINESS - AND THE COMPRESSED GAS ASSOCIATION.

MY COMPANY GENERATES ACETYLENE WHICH IS SOLD IN CYLINDERS FOR CUTTING AND WELDING USES. BECAUSE OF THE MASSIVE WEIGHT PER CYLINDER AND THE SMALL PAYLOAD THAT CAN BE SAFELY FILLED, THERE ARE FEW ECONOMIES OF SCALE IN OUR BUSINESS. TRANSPORTATION COSTS

LIMIT THE DISTANCE ACETYLENE CAN BE ECONOMICALLY TRANSPORTED. THIS MEANS THAT ACETYLENE GENERATING PLANTS, LIKE MY COMPANY, ARE SPREAD EQUALLY THROUGHOUT THE UNITED STATES. THIS ALSO MEANS THAT MOST OF THESE PLANTS ARE INDEPENDENT SMALL BUSINESSES.

THE COMPRESSED GAS ASSOCIATION (CGA) - WHICH HAS BEEN IN EXISTENCE SINCE 1913 - IS THE CHIEF INDUSTRY ASSOCIATION IN THE UNITED STATES AND CANADA REPRESENTING PRODUCERS OF COMPRESSED GASES AND CRYOGENIC LIQUIDS, AS WELL AS EQUIPMENT USED IN STORAGE, TRANSPORT, AND DELIVERY OF SUCH PRODUCTS. THE CGA HAS - THROUGH A SYSTEM OF VOLUNTARY STANDARDS - MADE THE COMPRESSED GAS INDUSTRY ONE OF THE SAFEST INDUSTRIES IN THE UNITED STATES. I MIGHT ALSO NOTE HERE, THAT IN THE SEVENTY-TWO YEARS OF CGA'S EXISTENCE, TODAY IS THE FIRST TIME WE HAVE COME TO CONGRESS TO TESTIFY ON A PENDING PIECE OF LEGISLATION.

I AM TESTIFYING TODAY, TO URGE THAT THE SUPERFUND TAX NOT BE UNJUSTLY OR UNFAIRLY IMPOSED ON ACETYLENE WHEN IT IS USED IN THE WELDING AND CUTTING INDUSTRY.

THE CURRENT SUPERFUND TAX FOCUSES ON CHEMICALS THAT SERVE AS "BUILDING BLOCKS" OF HAZARDOUS SUBSTANCES, WHOSE DISPOSAL CAN CAUSE ENVIRONMENTAL PROBLEMS. TAXING THESE BUILDING BLOCKS IS THOUGHT TO BE AN EFFICIENT WAY OF ASSURING THAT USERS OF THESE HAZARDOUS SUBSTANCES SHARE THE COST OF CLEAN-UP. WHEN ACETYLENE IS PUT INTO PIPELINES AND USED FOR CHEMICAL PROCESSES, IT SERVES AS A "BUILDING BLOCK" AND IS SUBJECT TO TAXATION. WE ARE NOT HERE TO QUESTION THE RATIONALE OF THE CURRENT FEEDSTOCK TAX OR ITS APPLICATION TO PIPELINE ACETYLENE.

THE ACETYLENE THAT MY COMPANY AND OTHERS LIKE US PRODUCES IS NEVER USED AS A BUILDING BLOCK FOR OTHER MATERIALS. IT IS COMPRESSED AND FILLED INTO CYLINDERS AND USED AS A FUEL FOR

WELDING AND CUTTING. CYLINDER ACETYLENE IS ENTIRELY CONSUMED WHEN USED. ITS ONLY BY-PRODUCTS ARE CARBON DIOXIDE AND WATER. NO HAZARDOUS SUBSTANCES ARE PRODUCED.

UNDER CURRENT LAW, PROPANE, THE FUEL WITH WHICH ACETYLENE PRIMARILY COMPETES FOR CUTTING AND WELDING USES, IS NOT TAXED AT ALL. BUTANE AND METHANE ARE TAXED ONLY WHEN USED AS FEEDSTOCKS; THEY ARE EXEMPT FROM THE FEEDSTOCK TAX WHEN THEY ARE USED AS FUEL. ALTHOUGH CYLINDER ACETYLENE IS NOT SPECIFICALLY EXEMPT FROM TAXATION, IT IS NOT FOR THE MOST PART TAXED BECAUSE IT IS GENERATED FROM CALCIUM CARBIDE - A COAL DERIVATIVE - AND SUBSTANCES DERIVED FROM COAL ARE EXEMPT FROM TAX UNDER SECTION 4662(B)(4) OF TITLE 16. THE EFFECT OF THE COAL EXCLUSION HAS BEEN TO PROVIDE CYLINDER ACETYLENE WITH THE SAME TAX TREATMENT AS COMPETING FUELS, SUCH AS PROPANE.

UNLESS STEPS ARE TAKEN TO CONTINUE THIS EQUAL TREATMENT, ELIMINATION OF THE COAL EXCLUSION COUPLED WITH A MAJOR INCREASE IN THE PER TON TAX ON ACETYLENE WOULD HAVE A DRASTIC EFFECT ON THE COMPETITIVE POSITION OF OUR INDUSTRY. IT IS NOT DIFFICULT TO ADJUST MOST WELDING TORCHES TO ACCOMODATE OTHER GASES, SUCH AS PROPANE. IF CYLINDER ACETYLENE IS SINGLED OUT FOR HEAVY TAXATION, OUR CUSTOMERS WILL SIMPLY SWITCH TO UNTAXED FUELS. OUR INDUSTRY IS NOT HEALTHY TODAY. ITS PRODUCTION HAS DECLINED ON THE AVERAGE OF FIVE PERCENT EACH YEAR SINCE 1980. DISCRIMINATORY TAXATION WILL SURELY HASTEN THIS DECLINE, DESTROYING MANY INDEPENDENT SMALL BUSINESSES.

AS I SAID EARLIER, THIS DISCRIMINATORY TREATMENT OF CYLINDER ACETYLENE CANNOT BE JUSTIFIED ON ENVIRONMENTAL GROUNDS. OUR PRODUCTS ARE NOT USED TO MAKE OTHER CHEMICALS AND THEY DO NOT PRODUCE HAZARDOUS WASTES.

IN ORDER TO AVOID PLACING OUR INDUSTRY AT AN UNFAIR COMPETITIVE DISADVANTAGE, WE SUGGEST THAT ANY MODIFICATION OF THE CURRENT SUPERFUND FEEDSTOCK TAX CONTAIN THE FOLLOWING EXCLUSION FROM THE DEFINITION OF A "TAXABLE CHEMICAL:"

> "UNDER REGULATIONS PRESCRIBED BY THE SECRETARY, ACETYLENE SHALL NOT BE TREATED AS A TAXABLE CHEMICAL IF IT IS USED FOR HEATING, SUCH AS IN WELDING AND CUTTING."

AGAIN, I WOULD LIKE TO SUM UP OUR POSITION.

1. ACETYLENE IS A FUEL WHEN USED FOR CUTTING AND WELDING IN THAT USE. IT PRODUCES NO TOXIC BY-PRODUCTS.

2. THE MAJORITY OF THE PRODUCERS ARE INDPENDENT SMALL BUSINESSES WHO DEPEND ON THIS ONE PRODUCT. THEY CAN NOT SWITCH TO ANYTHING ELSE. THE INDUSTRY IS HAVING A HARD

ENOUGH TIME COMPETING ON AN EVEN BASIS - IT CAN NOT CARRY A TAX ITS COMPETITORS ARE EXCLUDED FROM.

3. WE ARE ASKING ONLY FOR FAIRNESS. "CYLINDER ACETYLENE" SHOULD NOT BE COVERED BY A SUPERFUND TAX.

THE COMPRESSED GAS ASSOCIATION AND ITS STAFF WILL BE GLAD TO ANSWER ANY QUESTIONS THAT MIGHT ARISE AND SUPPLY ANY ADDITIONAL INFORMATION THAT MIGHT BE NEEDED.

THANK YOU AGAIN FOR YOUR TIME THIS MORNING.

STATEMENT OF EDWARD L. MERRIGAN, COUNSEL, NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, INC., WASHINGTON, DC

The CHAIRMAN. Mr. Merrigan.

Mr. MERRIGAN. Mr. Chairman, I appear here today on behalf of the National Association of Recycling Industries, which has a membership of 1,200 companies. And we are here to talk today about the metal recycling segment of the industry mainly.

Metal recyclers, Mr. Chairman, remove metals from the waste stream or divert them from the waste stream. And, therefore, even assuming metals could be considered toxic or hazardous in recycled scrap form, they save Superfund millions of dollars each year by taking metals out of the waste stream.

EPA has recently ruled that 95 percent perhaps of our metals are nonhazardous. And they are now investigating the remaining metals, principally lead, to determine whether they should be subjected to the hazardous waste regulatory regime.

In 1980, Congress taxed or put the feedstock on a list of metals, 80 to 90 percent of which must be imported from overseas. Therefore, as far as domestic effect is concerned, the tax on nickel, the tax on chromium is on the recycling part of the industry. The rest of the materials come from overseas.

Last year in Congress, they were suggesting that the tax should be extended to aluminum, copper, lead, and zinc. We respectfully urge that until EPA completes the study under RCRA, which is now beginning, that none of those metals should be added to the feedstock list.

On the waste-end side, we think that any recycler who disposes waste into the stream should pay the waste-end tax. However, I think inadvertently Senator Mitchell's bill and the administration's bill taxes the mere receipt of recyclable material as it arrives at a waste management unit. We urge that when materials arrive at a unit for recycling, such as the batteries that the gentleman just testified about, they should not be subject to the waste-end tax.

If there is any disposing or any generating of waste, that should be taxed, but not the material that is there to be recycled.

Finally, we regularly export in normal trade all of these recycled metals. The waste-end tax, therefore, should not be imposed on the exportation of metals. These are regular commercial commodities, not waste. I don't think anyone intended that the waste-end tax apply to normal exports of metals. But in case they did, that really should be changed.

Thank you, Mr. Chairman.

[The prepared written statement of Mr. Merrigan follows:]

NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, INC.
330 MADISON AVENUE / NEW YORK, N.Y. 10017 / (AREA CODE 212) 867-7330

BEFORE THE
COMMITTEE ON FINANCE
UNITED STATES SENATE
WASHINGTON, D.C.

Hearings On Proposed
Superfund Amendments Of 1985

STATEMENT OF NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES, INC.*

My name is Edward L. Merrigan. I appear before the Committee today as counsel to the National Association of Recycling Industries, Inc. (NARI), the trade association for the nation's metals, paper, textile and rubber recycling industries.

NARI's membership consists of approximately 1,200 companies located throughout the United States. These companies are engaged principally in the industrial recycling of metals and paper recovered from solid waste for reuse as new domestic raw materials, and for exportation to this nation's trading partners abroad.

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*/ Summary Sheet precedes statement.

The National Recycling Industry — Its Contribution To The Economy, U.S. Foreign Trade And The Environment

Each year the American recycling industry supplies both the United States and many of its foreign allies with significant portions of their basic industrial raw material needs. In 1984, for example, approximately 30% of this country's iron, steel and aluminum; 40% of its copper; about half of its lead and 20% of its zinc were produced from recycled scrap metal. In addition, important volumes of nickel, chromium, cobalt and other scarce strategic metals were diverted or recovered from the waste stream and recycled for industrial reutilization here at home. Simultaneously, the exportation of recycled materials, which are surplus to U.S. needs, has benefitted both the U.S. balance of payments and balance of trade positions, while it has provided valuable international trade opportunities for American exporters.

Studies made by various federal agencies have repeatedly demonstrated that industrial recycling, properly conducted, enhances the environment in several different ways. Industrial metal recycling, for example —

(1) conserves energy, as well as scarce, depletable virgin resources;

(2) results in far less air and water pollution;

(3) reduces the United States' dangerous reliance on foreign imports of critical virgin raw materials; and

(4) aids cities and states across the nation in their struggle against mushrooming solid waste management problems and costs.

RCRA's Statutory Mandate
For Federal Encouragement
Of Maximum Industrial Recycling

Consequently, when Congress enacted the Resource Conservation and Recovery Act (RCRA) to regulate the management of hazardous wastes, it simultaneously enacted a series of RCRA statutory mandates aimed at (a) maximizing beneficial industrial recycling and (b) removing all burdensome federal disincentives to maximum recycling. The preamble to RCRA thus contains the following Congressional findings with respect to recycling, at 42 U.S.C. 6901(c):

> "The Congress finds with respect to materials, that —
>
> (1) millions of tons of recoverable material which could be used are needlessly buried each year;
>
> (2) methods are available to separate usable materials from solid waste; and
>
> (3) the recovery and conservation of such materials can reduce the dependence of the United States on foreign resources and reduce the deficit in its balance of payments."

Accordingly, one of the main objectives of RCRA was described by that statute itself to be "the protection of health and the environment and to conserve valuable material and energy resources by. . .promoting new and improved methods of collection, separation. . . recovery, and recycling of solid wastes. . .." (See 42 U.S.C. 6902(6)).

Contrary To RCRA, However, Superfund Taxes On Recycled Metals Impose A Self-Defeating, Counterproductive Economic Restraint On Industrial Recycling Of Materials From Solid Waste

Unfortunately, little has been done by the Federal Government since RCRA was enacted to maximize industrial recycling in the United States. A "recycling investment tax credit", enacted shortly after RCRA became law, was short-lived. Included in the emergency energy legislation of the late 1970's, that very modest credit died with other temporary energy tax incentives in 1982.

In the meantime, in 1980, when the 96th Congress rushed to enact the original Superfund law in the closing hours just before final adjournment of that Congress, it imposed the new Superfund "chemical tax" on such vitally important, strategic recycled metals as nickel, chromium and cobalt without determing whether such taxation was necessary, avoidable, or in the best overall interests of the United States.

Worse yet, in 1984, shortly before the 98th Congress was scheduled to adjourn, the House of Representatives ignored warnings and recommendations for a Superfund recycled metals tax exemption from the House Committee on Energy and Commerce and approved legislation calling for vastly-increased Superfund tax rates and for extension of those increased "chemical tax" rates to a new list of recycled metals consisting of recycled aluminum, copper, lead and zinc.

Fortunately for the United States and the nation's industrial recyclers, who were still suffering from the effects of a severe economic recession, the Senate Finance Committee refused to be stampeded into approving such exceedingly unwise, counterproductive, self-defeating legislative proposals in the waning moments of another Congressional session, shortly before a Presidential election. Plainly, this Committee acted wisely and properly for the following reasons:

1. No evidence has been developed or presented by EPA or any other federal or private agency to establish that recyclable aluminum, copper, lead, nickel or zinc scrap, for example —or recycled aluminum, copper, lead, nickel or zinc metals produced from recyclable scrap— are "hazardous materials" that should be regulated under the federal hazardous waste statutes.

We all know that recyclable aluminum scrap consists in large part of used aluminum beverage cans from which millions of Americans drink their Coca-Colas and beer. We also know that we regularly drink water from copper pipes manufactured from recycled copper, and eat food cooked in copper pots and pans produced from recycled copper.

Indeed, on February 22, 1985 —approximately four months after the 98th Congress adjourned— EPA disclaimed in a letter to NARI that it had any current intention to subject metal recycling to federal hazardous waste regulatory controls. That letter stated:

> ". . .(W)e agree with NARI's interpretation that the recycling of non-hazardous scrap metal. . .is totally unaffected by the. . . [hazardous waste] regulatory regime. . .
>
> ". . .Thus,. . .we are exempting [scrap metal] from regulatory control while we continue to study the characteristics of scrap metal and the management practices of the scrap metal industry."

Since recyclable and recycled scrap metals are thus not subject to EPA's hazardous waste regulatory regime, plainly they should not be compelled to bear the burden of a Superfund "chemical tax" assessed by Congress against chemicals and chemical compounds such as acids, oxides, chlorides and sulfates that are clearly subject to EPA hazardous waste regulation.

2. Even assuming, exclusively for the sake of legislative discussion, that a particular recycled metal might somehow, someday be labeled "hazardous" for some isolated reason or in some special situation, it would still be counterproductive, self-defeating and short-sighted for Congress to impose a Superfund tax, or any other ill-conceived economic restraint, on all beneficial recycling of that metal.

Under current Superfund clean-up technology, hazardous waste materials such as chemical compounds discovered in environmentally—unsafe dump sites are merely transferred, at great cost, to allegedly environmentally-safe Superfund disposal sites. That "transfer technology" has been widely criticized by the General Accounting Office, the Office of Technology Assessment and others because it fails to remove hazardous wastes from the waste stream —on the contrary, it retains those wastes in the disposal system by merely moving them from one location to another, with the ever-present specter of recurring Superfund clean-up costs and problems at the new location.

Industrial metal recycling, however, effectively removes metals —including any that might ever be labeled "hazardous" for any purpose in the future— from the waste stream for beneficial reuse.

Thus, such metal recycling, properly conducted, must not be foolishly restrained or impeded by Superfund taxation since obviously it operates to eliminate both —

(a) the need to expend Superfund "transfer costs" by annually recycling and beneficially reusing millions of tons of waste materials that would otherwise be dumped, and

(b) the need to expend additional Superfund clean-up costs in all cases where Superfund's "transfer technology" fails after dumped materials are moved to Superfund disposal sites that do not function as contemplated by EPA.

In other words, metal recycling has proved itself to be an established, effective, beneficial environmental alternative to Superfund's dubious "transfer technology". It has plainly saved Superfund millions of dollars annually in both "transfer costs" and possible repetitious clean-up or containment costs, and it will continue to be a viable alternative in the years ahead if the Federal Government will encourage the process, not tax it to death.

Indeed, as a Congressional supporter of metal recycling recently declared: "For what they accomplish and the millions of dollars they save Superfund each year, metal recyclers deserve a Superfund medal, not a Superfund tax!"

3. Finally, Superfund taxation of recycled metals is double taxation, or multiple taxation at its very worst. For example, any metal for which the Superfund tax was paid when it was produced

in virgin form, is retaxed each time the metal is recycled. This obviously places metal recycling, which should be maximized as envisioned by Congress in RCRA, at a competitive disadvantage because "double" Superfund taxes must be absorbed in the prices charged for recycled metal that must compete with both its virgin counterpart and recycled metal produced abroad.

Legislative Recommendations

NARI Urges This Committee To Report Superfund Legislation That Does Not Expand The List Of Metals Subject To The Chemical Tax, And Which Exempts Recycled Metals Already On The Chemical Tax List From Such Erroneous, Self-Defeating Taxation

In sum and substance, therefore, NARI and its members throughout the recycling industry urge this Committee to approve and report legislation that does not add any new metals such as aluminum, copper, lead or zinc to the Superfund chemical tax list.

There seems to be a growing understanding and consensus on why it would clearly be wrong for Congress to subject these metals, or any of them, to the "chemical tax" at this time, since the Administration bill presented by the President and EPA, S.596 introduced by Senator Bradley, and S.955 introduced by Senators Mitchell and Chafee unanimously exclude these basic raw materials of the American metals industry from this particular Superfund tax. NARI thus supports this aspect of each of those proposed bills.

In addition, of course, NARI urges the Committee to correct without further delay the plainly erroneous action Congress took at the end of the 96th Congress in 1980 whereby recycled nickel, chromium and other very scarce, strategic recycled metals were included in the original Superfund "chemical tax" list. That error should be corrected by inclusion of the "recycled metals" amendment found in Appendix A to this statement.

Briefly summarized, that amendment would exempt recyclable metal scrap and recycled metal produced from recyclable metal scrap from the "chemical tax" or "feedstock tax" only. As indicated above, all such scrap metal is currently exempt from EPA's hazardous waste regulations, and unless and until some need for regulation is demonstrated and established, plainly metal recycling should not be unfairly burdened by this particular Superfund tax designed for chemicals that EPA is actively regulating under the hazardous waste program.

The proposed amendment contains an important proviso however. It states that no taxpayer with a site listed on EPA's National Priorities List who fails to comply with an EPA or court clean-up order under RCRA, CERCLA or both, will be eligible for this recycled metals tax exemption during any such period of noncompliance. This proviso, we respectfully submit, will serve as a powerful statutory incentive for the maintenance of clean, environmentally-sound operations throughout the metal recycling industry. It will, therefore, effectively promote the very conditions Superfund itself was designed to attain.

While NARI Supports The Imposition Of A Waste End Tax On Waste Disposal Activities, That Tax Must Not Be Extended To Necessary Metal Recycling Functions Or To The Regular Exportation Of Recyclable Or Recycled Metals

NARI has historically supported the maxim that those who dispose wastes into the solid waste stream must bear the costs of that waste disposal. Thus, even recyclers who dispose waste materials must contribute fairly to any disposal costs for which they are responsible.

However, the waste end tax proposals now before this Committee go too far in that they, inadvertently or otherwise, propose to extend waste end taxes ostensibly aimed at waste disposal only to essential metal recycling activities and even to the normal exportation of recycled metals.

In this regard, Section 303(a) of the Administration bill proposes to apply the waste end tax to —

(i) "the receipt of hazardous waste at a qualified hazardous waste management unit", and

(ii) "the exportation of hazardous waste from the United States".

Senator Mitchell's S.955 contains substantially identical provisions in Section 111.

Senator Bradley's S.596, on the other hand, appropriately restricts the waste end tax to (a) "the receipt of a hazardous waste for disposal at a qualified hazardous waste disposal facility", and (b) it does not contain a broad, wholly unacceptable "export provision" applicable to regular U.S. recycled metal exports (See Section 202).

NARI strongly urges the Committee to adopt Senator Bradley's approach for the following reasons:

1. Battery recycling facilities are the only recycling facilities that presently must be licensed or "qualified" under applicable EPA rules. But, automobile battery recycling is clearly one of the most important and voluminous recycling activities in the United States. Without such recycling at current levels at least, the environmental consequences for this nation —and the effect on the recycling industry, of course— would be serious and severe. Consequently, the mere "*receipt*" of batteries at such recycling facilities must not trigger the waste end tax.

As Senator Bradley's bill recognizes, the tax must apply —in the case of recyclable or recycled metals at least— only when materials are "*received for disposal*".

2. As demonstrated in the "chemical tax" portions of this statement, several important recycled metals were erroneously exposed to the Superfund "chemical tax" in 1980. Those same recycled metals —nickel, chromium, etc.— must not now be subjected to the waste end tax solely because they are "*exported*" in normal commercial channels to customers of the U.S. recycling industry overseas. Such "exportation" is *not* waste disposal in any sense, and thus it would plainly be extremely erroneous for Congress to apply the waste-end tax to such regular business activities of obvious benefit to the United States.

An amendment, recommended to correct these waste end tax deficiencies, is attached hereto as *Appendix B*.

Conclusion

We thank you, Mr. Chairman, the Committee and your excellent staff for permitting us to testify before you on this matter of vital importance to our industry. In closing, we urge the Committee to adopt the new amendments attached to this statement on *Appendices A* and *B*.

PROPOSED SUPERFUND CHEMICAL TAX AMENDMENT

"Section 4662(b) of the Internal Revenue Code is amended by inserting the following at the end of that subsection:

"(7) Recycled Metal -- For purposes of this subchapter —

"(A) In General -- Except as provided in subparagraph (B), the term "taxable chemical" and the nonferrous metals listed in the table in Section 4661(b) shall not include any recyclable metal diverted or recovered from solid waste for recycling and reuse, or any recycled metal produced therefrom.

"(B) Exception -- Subparagraph (A) shall not apply to any recyclable or recycled metal sold by a taxpayer during any period (1) a site for which the taxpayer has responsibility is listed on the National Priorities List published by the Environmental Protection Agency under Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, and (2) the taxpayer fails to comply with any final order or judgment issued against the taxpayer in any action or proceeding under the Comprehensive Environmental Response, Compensation and Liability Act, as amended, the Solid Waste Disposal Act, as amended, or both.

"(C) For purposes of this paragraph, the terms —

(i) "Solid waste" shall have the meaning provided by Section 1004 of the Solid Waste Disposal Act, as amended.

(ii) "Recyclable metal" means metal scrap and other metal bearing materials diverted or recovered from solid waste for recycling and reuse.

(iii) "Recycled metal" means any metal produced or derived from recyclable metal."

APPENDIX A

PROPOSED SUPERFUND WASTE END TAX AMENDMENT

"Section 4681 of the Internal Revenue Code is amended by inserting the following at the end of that subsection:

"( ) The tax imposed by subsection (a) of this section shall not apply to the receipt at a qualified hazardous waste management unit of any recyclable metal for the purpose of recycling and reuse, or to the exportation from the United States of any recyclable or recycled metal. For purposes of this subsection, the terms —

(i) "Recyclable metal" means metal scrap and other metal bearing materials diverted or recovered from solid waste for recycling and reuse.

(ii) "Recycled metal" means any metal produced or derived from recyclable metal.

(iii) "Solid waste" shall have the meaning provided by Section 1004 of the Solid Waste Disposal Act, as amended."

APPENDIX B

The CHAIRMAN. Gentlemen, I have no questions. It has been a most informative panel, a most informative morning. I appreciate very much your patience in waiting this long.

George.

Senator MITCHELL. I have no questions, Mr. Chairman. I thank the witnesses as well.

The CHAIRMAN. Thank you very much. We are adjourned.

[Whereupon, at 12:40 p.m., the hearing was concluded]

[By direction of the chairman the following communications were made a part of the hearing record:]

Statement of Terry McManus
Chairman of the Environmental and Occupational
Health Legislative Committee
of the American Electronics Association

to the Senate Finance Committee
Hearing on Superfund Reauthorization

April 26, 1985

Summary

- AEA supports the reauthorization of Superfund legislation and a waste-end tax supplemental to a feedstock tax, provided the waste-end tax is equitably distributed.
- AEA believes it is important to address the question of what is the most equitable source of funds, in addition to the petroleum and chemical feedstock tax.
- AEA opposes proposals to base the Superfund tax on corporate net profits. This form of tax is inequitable to companies that generate a very small ratio of hazardous waste compared to their corporate net profits.
- AEA believes that any waste-end tax should create economic incentives for waste producers to switch to environmentally preferable methods of waste management.

AEA American Electronics Association
1612 K Street, N.W., Washington, D.C. 20006

The American Electronics Association (AEA) appreciates the opportunity to comment on the proposals to extend the Comprehensive Environmental Response, Compensation and Liability Act (Superfund). Our comments will focus on changes in the present Superfund taxes and on additional revenue sources that have been suggested to raise funds for expansion of the program.

AEA's 2,700 member companies encompass all segments of the electronics industries, including manufacturers and suppliers of computers and peripherals, semiconductors and other components, telecommunications equipment, defense systems and products, instruments, software, research and office systems. The AEA membership includes companies of all sizes, from "start-ups" to the largest companies in the industry. The greatest number of the AEA membership (71%) are small companies employing fewer than 250 employees. AEA member companies account for 63% of worldwide sales of the U.S.-based electronics industries.

Currently employing 2.5 million Americans, the electronics industries are among the fastest growing in the economy. The electronics industries have become the largest single manufacturing employer in the United States.

Potential Funding Sources

In examining potential funding sources, AEA believes it is important to address the question of what is the most equitable source of funds, in addition to the petroleum and chemical feedstock tax. AEA suggests that Congress consider the feasibility of modifying the feedstock tax as follows:

- Expand the list of materials subject to feedstock tax;
- Tax imported materials consistent with domestically produced materials;
- Exempt domestically produced materials which are exported.

Proposals for a tax on corporate net profits have been submitted. AEA opposes this type of tax because it is inequitable to companies that generate a very small ratio of hazardous waste compared to their corporate net profits. The electronics industries, collectively, would be burdened with a disproportionate share of the cost of this form of tax.

AEA is prepared to support a waste-end tax supplemental to a feedstock tax, provided that a waste-end tax is equitably distributed. In AEA's opinion, equitable distribution of any waste-end tax would require the following:

- Equal taxation of all hazardous wastes which are disposed of onto or into the earth;
- Equal taxation of both on-site and off-site disposal practices;
- No taxation of hazardous waste treatment processes.

Economic Incentives for Waste-end Tax

A waste-end tax should create economic incentives for waste producers to switch to environmentally preferable methods of waste management. Thirty-two million tons of the nation's hazardous wastes are disposed of via deep-well injection. Deep-well injection of hazardous waste is as potentially detrimental to the environment as are other forms of land disposal. Proposed taxation of the deep-well injection of hazardous waste at a lower rate than taxation of other forms of land disposal is inherently inequitable.

According to a 1983 Office of Technology Assessment report, approximately 80% of the nation's hazardous waste is disposed of on-site. Exempting generators of hazardous waste who dispose of those wastes on-site from a waste-end tax requires other generators to provide the superfund monies for the clean up of the National Priority List (NPL) sites. The NPL listing criteria does not differentiate between on or off-site disposal areas. NPL listing criteria are only concerned with adverse impacts to the environment. Therefore, Congress should follow this example. A waste-end tax must be applied equally to both on-site and off-site disposal.

AEA supports Resource Conservation and Recovery Act (RCRA) policies which favor use of waste treatment processes rather than land disposal methods. The RCRA policy of encouraging treatment of hazardous waste should not be undercut by a Superfund tax on such treatment processes. AEA opposes taxation of treatment processes such as incineration, recycling, and any wastewater treatment pursuant to the Clean Water Act.

WRITTEN STATEMENT
OF THE
AMERICAN GAS ASSOCIATION
BEFORE THE
COMMITTEE ON FINANCE
OF THE
UNITED STATES SENATE
ON THE
REAUTHORIZATION OF TAXES IN THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT

April 25, 1985

The American Gas Association is a national trade association representing the natural gas distribution and transmision industry. A.G.A.'s 300 members serve 150 million consumers in all fifty states. Since methane is the principal constituent of natural gas along with small fractions of light hydrocarbons, our members -- and all gas consumers -- are clearly interested in the methane feedstock tax levied in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), far better known as Superfund.

Although Superfund has now been in existence for nearly five years, it seems clear that the statute must be reauthorized and that the trust must continue to be funded. The ultimate size of the fund and its disposition, however, are difficult policy issues that only Congress can resolve, and A.G.A. does not take a position on those issues. We only wish to offer our comments on Superfund taxes.

There are several proposals before Congress to reauthorize Superfund taxes. Although different bills rely on different tax mechanisms -- or on different combinations of tax mechanisms -- there are four basic taxes proposed.

(1) Reauthorizing the present feedstock tax at the same or a higher rate. In S.955, for example, the feedstock tax on methane is reauthorized and remains at $3.44/molecular ton.

(2) A waste end tax on the production of regulated hazardous wastes.

(3) A contribution to Superfund from general tax revenues.

(4) A tax on corporate net receipts that would be dedicated to the CERCLA trust fund.

We have reviewed these proposals in light of A.G.A.'s longstanding support for responsible environmental legislation, the Administration's budget resolution -- which we recently endorsed -- and our members' firm support for tax simplification and fiscal reform.

Of the four proposals, a waste end tax is the most equitable in terms of matching tax liability with the generation of hazardous waste. We also support the reauthorization of a feedstock tax, if exemptions for fuels, intermediate feedstocks, and fertilizer production are retained. Because the attached studies show that our domestic petrochemical industry faces strong foreign competition, limited contributions from general revenues may also be necessary to ease the tax burden on a single industry. However, we do not favor a corporate Superfund tax since such taxes are at odds with fiscal reform and tax simplification.

BEST COPY AVAILABLE

Discussion of the Four Superfund Tax Proposals

(1) THE FEEDSTOCK TAX: The existing Superfund imposes an excise tax on the sale or use of 42 specific chemical substances, plus crude oil. The tax is collected on imports and exports, as well as on domestic useage. Methane, which is the principal constituent of natural gas, is taxed at $3.44/molecular ton or about 43 cents/million Btu, when it is used as a feedstock. There are 6 exemptions from the feedstock tax, several of which directly affect the natural gas transmission and distribution industry and its 160 million consumers. Sutstances that are used for fuels, intermediate feedstocks, and fertilizer production are exempt. Congress included these exemptions: to keep the tax from falling on consumers, in the case of fuels; to prevent double taxation, in the case of intermediate feedstocks; and to aid American agriculture, in the case of fertilizers. These policy considerations remain valid today and Congress should reauthorize all the exemptions, if it reauthorizes the feedstock tax.

We wish to make absolutely clear that the only reason that natural gas is taxed under Superfund is because of its limited use for feedstocks to make other chemical substances, few of which are requalted by CERCLA. Natural gas is not a toxic substance. It is not regulated under Superfund, and is in fact specifically exempt from that statute. Indeed, natural gas is such an environmentally benign fuel that it produces no liquid or solid residues when burned. Natural gas also emits fewer combution gases than other fossil fuels and can be used with coal and oil to reduce total air pollution from those fuels.

Fuels Exemption: When Superfund was enacted in 1980, Congress wisely excluded substances used as fuels from taxation since they do not add to the accumulation of hazardous wastes (26 U.S.C.A., 4662 (b) (1)). In 1984, more than 97% of all natural gas sold was used as a fuel, while less than 3% of gas sold was used for feedstocks.

USER	USAGE
45 million homes	25%
3.5 million small businesses, schools and hospitals	14%
182,000 industrial customers for steam and electrical generation, plus numerous manufacturing and agricultural processes	53%
Other uses, including 2.7% feedstock use	8%

Thus, the overwhelming majority of all natural gas sold in this country is used as a safe and efficient fuel. When the feedstock tax is reauthorized, Congress should continue to exclude methane and other substances -- such as butane -- when they are used as fuels since they do not contribute to the production or accumulation of hazardous waste.

The Tax Reform Act of 1984 (P.L. 98-369) further clarified the feedstock tax so that the production of liquid fuels from methane, butane, and nine otherwise taxable feedstocks is exempt. Since the transportation fuels made with these feedstocks: (1) are already taxed; and (2) are totally consumed when used, Congress should also retain these exemptions. Substances should only be taxed to the extent that they are used as final feedstocks.

Intermediate Feedstock Exemption: Petrochemical manufacturing actually consists of a series of steps that use basic substances to create more and more complex chemicals. For example, natural gas is a basic feedstock for ammonia. Ammonia is then used as a feedstock in various other chemcial processes and thus is taxed under Superfund as a feedstock. In order to prevent double taxation, 26 U.S.C. 4662(d) permits the Secretary of the Treasury to refund or credit the tax when a manufacturer uses one taxable substance to make a second taxable substance. Our survey of the literature and our own studies show that 60% of the natural gas that is used for feedstocks goes into ammonia production. (Please see Appendix A). As a matter of tax equity, any reauthorization MUST retain this exclusion to prevent double taxation.

Fertilizer Exemption: The present law also excludes from the feedstock tax ammonia, methane, and other constituents of fertilizer (26 U.S.C. 46 62(b)(2)). Congress included this provision for a number of still valid reasons: (a) as an aid to U.S. agriculture; and (b) as a matter of equity, since fertilizer is not a waste within the preview of CERCLA, although its manufacture and use is comprehensively regulated by other environmental statues. The American Gas Association recently completed a study on worldwide ammonia production. This study -- which appears as Appendix B -- found that, after a period of very harsh competition from subsidized imports, domestic ammonia producers may regain some market share because capital costs for new U.S. capacity are lower than capital costs in Third World countries. However, it is absolutely essential not to burden a remerging domestic ammonia industry with higher product costs -- such as feedstock taxes -- since American manufacturers face very severe competition from Canadian, Mexican and Caribbean ammonia exporters. For these reasons, the exclusion from the feedstock tax for fertilizer production must be preserved in the reauthorization. We would also add that imported feedstocks should be taxed.

In summary, the present tax law includes three types of exclusions that affect natural gas: (1) exclusions for fuels; (2) exclusions for intermediate feedstocks to prevent double taxation; and (3) exclusions for fertilizer production. All of these exclusions were created for policy objectives that are still valid. Each exclusion should be retained.

(2) A WASTE END TAX: Although there is no waste end tax in the present law, all the reauthorization bills include a tax on the quantity of hazardous wastes that must

be disposed of at the end of the manufacturing cycle. In addition to raising more revenue for the CERCLA fund, the tax also encourages recycling and/or destruction of hazardous wastes. Of the four options, it most clearly matches the tax burden with the amount of waste generated, and for this reason A.G.A. finds it an appropriate Superfund tax mechanism. The chief problem with waste end and feedstock taxes is that they fall on the petrochemical industry. One industry can not sustain the tax burden for a very large Superfund, thus, we believe that limited contributions from general revenues may be necessary.

(3) CONTRIBUTIONS FROM GENERAL REVENUES: The present Superfund is partially funded by contributions from general revenues. However, we understand that the Administration's bill eliminates this contributin. A.G.A. has endorsed the Administration's budget resolution, since we believe that deficit reductions are essential for the continued economic well-being of the United States. Whether or not CERCLA funding from general revenues should be cut, however, is a difficult policy issue that only Congress can resolve. Since both feedstock and waste end taxes fall on the domestic petrochemical industry, if a very large fund is needed to clean-up abandoned hazardous waste sites, one industry may not be able to finance the entire fund without contributions from general renvenues. Our attached appendices show that the petrochemical industry has

experienced sharp foreign competition. Therefore, large excise and waste end taxes could have disasterous consequences for U.S. petrochemical companies. Contributions to Superfund from general revenues are also justifiable since the economy -- as a whole -- benefited from the manufacturing processes that produced the wastes. Thus, if Congress determines that a large Superfund is needed, contributions from general revenues are appropriate, as long as they stay within the budget framework.

(4) GENERAL CORPORATE TAXES: Despite the surface appeal of a corporate tax dedicated to Superfund, A.G.A. does not support this funding mechanism for two reasons:

- A.G.A. does not believe that it is good tax policy to add more off-budget items at this time. In future years, the tax would not be subject to the same scrutiny and public debate that Congress applies to line items in the budget. If Congress is serious about tax simplification and other fiscal reforms, then it should be very cautious about the creation of new off-budget items.
- From a parochial point-of-view, several of the corporate tax proposals require the taxpayer to change its accounting and/or recordkeeping practices. Thus, this tax will increase compliance costs in addition to being at odds with tax simplification goals.

On the first point, while it is true that corporations have benefited from the processes that created hazardous wastes -- that same nationale applies to the public at at large. All our citizens have benefited from those processes -- not only from more jobs and a higher standard of living but from convenient, consumer products. Furthermore, corporations would contribute to the Superfund -- through their ordinary corporate taxes-- if general tax revenues were used to supplement the fund.

Frankly, the appeal of a dedicated tax is that it is an off-budget item. From the taxpayers' perspective, however, new off-budget items contravene the goals of tax simplification and budget reform. If an item cannot be justified during the rough and tumble of debate on the budget, that is no reason to treat it as an off-budget item. The budget process will necessitate searching inquiry and Congressional scrutiny into the operation of the fund. Since the Superfund tax will collect significant amounts of money over the decade, this oversight may be invaluable.

On the second point, various tax mechanisms have been proposed: (a) value added or general federal sales taxes on manufacturing; (b) net receipts taxes on corporate gross receipts less costs of goods sold; and (c) taxes on earnings and profits. Each proposal has defects. A value added or general federal sales tax represents a major change in U.S. tax policy. Neither taxpayers nor tax collectors are set-up to pay or collect this tax. Initial start-up and compliance costs would be completely out of proportion to the tax raised. Net receipts taxes, on the other hand, may cause serious economic distortions since they favor service industries over manufacturing. Furthermore, domestic manufacturers are even more disadvantaged, unless imports are also taxed. Lastly, corporations that are able to take advantage of numerous tax preferences may escape a tax on earning and profits altogether. Thus, a surtax may add to existing inequities in the tax code. The defects in all three general corporate tax proposals suggest that new, dedicated taxes are inappropriate. Instead, Congress should devote itself to tax simplification and reform.

SUMMARY

Natural gas is not a toxic substance regulated under Superfund. Gas is taxed under CERCLA soley because it is valuable feedstock for certain chemicals. The Committee must continue to exclude substances used for fuels, intermediate feedstocks, and fertilizers from Superfund taxation. From a policy perspective, the Committee should consider the economic wellbeing of the domestic petrochemical industry before levying a high waste end or feedstock tax. To ease the Superfund tax burden on a singe industry, limited contributions from general tax revenues may be necessary. However, the alternative of a general corporate tax will increase compliance costs and is at odds with tax and budget reform -- thus, A.G.A. opposes a general corporate tax.

Appendix A

GAS RESEARCH INSIGHTS

An occasional publication of Gas Research Institute on topics of current interest.

Status and Outlook for Natural Gas Use As Chemical Feedstock

by
Michael E. Samsa
Bruce A. Hedman
Irvine J. Solomon

August 1984

Abstract

The future of natural gas consumption by the U.S. petrochemical industry has been a topic of growing concern in the natural gas industry over the past several years. The petrochemical industry, which includes SIC 28 (Chemicals and Allied Products) and SIC 29 (Petroleum and Coal Products), has historically accounted for about one-half of total industrial gas consumption, or about 3.0 to 3.2 quads per year. Recently, however, natural gas consumption in the petrochemical industry has declined as a result of reduced refinery throughput, process efficiency improvements, and a drop in production of many intermediate and finished chemical products. Indeed, composite domestic production of the fifty largest volume chemicals has declined an average of 1.3 percent per year since 1977.

Natural gas consumed by the petrochemical industry is used either for fuel and power or as process feed material for conversion to other intermediate or finished-product chemicals. Of the 3,125 billion cubic feet (bcf) of natural gas sales to the petrochemical industry in 1980, 688 bcf, or 20 percent, was used as a process feedstock. An additional amount of gas, approximately 475 bcf, was consumed as fuel associated with methane feedstock conversions. The remaining 1,962 bcf was consumed for fuel and power throughout the petroleum and chemical industry.

This analysis focuses on the economic, market, and technological questions related to the status and outlook for natural gas use as a chemical feedstock. The purpose is to review the important factors determining the future of gas consumption in this segment of the petrochemical industry and to provide perspective on the relative magnitude of each in determining this future. The fundamental question to be answered is what, if any, is the appropriate role for GRI-sponsored research in chemical conversion of methane that would be of mutual benefit to the regulated gas industry and the customers it serves.

The analysis concludes that the overriding determinants governing the future of bulk chemicals currently produced from methane are relatively high domestic natural gas prices and strong efforts on the part of major oil-producing nations to export high-value-added products derived from what is now flared gas. Thus, there is little optimism that near-term R&D improvements in existing technologies could significantly alter current market trends. Research directed toward the catalytic production of bulk chemicals not currently derived from methane, and basic research into new ways of breaking and "reforming" the methane molecule bonds by other catalytic or biological routes offer some potential in the longer term.

GRI Gas Research Institute, 8600 West Bryn Mawr Avenue, Chicago, Illinois 60631 312/399-8100

Introduction

In 1980, natural gas sales to all sectors of the economy totaled 18,216 billion cubic feet (bcf). Of that amount, U.S. industry (excluding lease and plant fuel and electric utilities) consumed 7,172 bcf. As shown in Figure 1, the petrochemical industry, composed of SIC 28 (Chemicals and Allied Products) and SIC 29 (Petroleum and Coal Products), consumed 44 percent of industrial gas sales, or 3,125 bcf of natural gas, as a fuel and feedstock.[1,2]

Fuel uses, excluding fuels for feedstock conversion, accounted for 63 percent (1,963 bcf) of natural gas consumption by the petrochemical industry. The remaining 37 percent (1,163 bcf) was used as a chemical feedstock and as fuel associated with the conversion of methane to commodity chemicals. The largest volume chemicals currently produced from methane feedstock include ammonia, methanol, hydrogen, carbon black, and others such as acetylene, hydrogen cyanide, and chlorinated methanes. In 1980, a peak production year for bulk chemicals from methane, nearly 60 percent of the feedstock and associated fuel was used for the production of ammonia. Methane for ammonia feedstock accountedfor 367 bcf, while an additional 300 bcf of natural gas was used as fuel in the methane-to-ammonia conversion process. Methanol production consumed another 132 bcf of natural gas, 77 bcf as feedstock and 55 bcf as fuels. Hydrogen accounted for just over 300 bcf of methane consumption, 205 bcf as feedstock and an estimated 100 bcf as fuel. Carbon black and other chemicals make up the remainder.

It is estimated that approximately 40-50 percent of natural gas consumed by the petrochemical industry in 1980 was supplied by intra and interstate pipelines. The remaining 50-60 percent was supplied by direct producer sales. Although difficult to determine from available data sources, an estimated 30-35 percent of the feedstock methane and associated fuels is transported in interstate pipelines. At 1980 chemical production levels, this amounts to an interstate gas market of 350-400 bcf.

The future of this natural gas market depends critically on a number of economic and production factors, as well as regional and international trade considerations related to those bulk chemicals now produced primarily from feedstock methane. The status and outlook for each major commodity chemical is discussed separately in the following sections. Implications of these factors and opportunities for gas industry R&D are discussed in the final section.

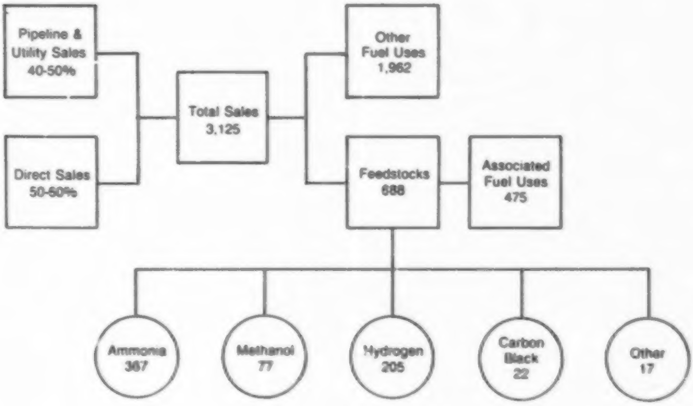


Figure 1. Natural Gas Consumption in the Petrochemical Industry in 1980 (Billion Cubic Feet). (Source: Ref. 2 and GRI estimates.)

Ammonia (NH_3)

Ammonia is produced by catalytic reaction of nitrogen from air and hydrogen from natural gas. Consumption of ammonia in the United States is dominated by its application in nitrogenous fertilizers, which accounts for 80 percent of the end-use demand. Resins, fibers, and plastics used primarily in the construction and automotive industries account for an additional 15 percent of ammonia demand, with the remaining 5 percent used in the production of explosives for mining and military applications.

Ammonia is the largest consumer of feedstock methane, and in the peak production year, 1980, it accounted for the consumption of 367 bcf of natural gas for feedstock, and an additional 300 bcf of natural gas for fuel. As shown in Figure 2, U.S. ammonia production grew steadily from 13.8 million metric tons in 1973 to a peak of 17.8 million tons in 1980. Domestic production declined 25 percent between 1980 and 1983, falling to a 10-year low of 13.1 million metric tons. Industry estimates of ammonia production for 1984 forecast a recovery to 1982 production levels of 14.5 to 15.0 million tons. Lower grain inventories and an end of the government's payment-in-kind program will lead to the restoration of a sizable portion of the agricultural acreage previously held out of production and greatly boost ammonia demand.[3-4] Reduced demand for ammonia products coupled with rising natural gas prices has lead to the permanent or temporary closing of nearly a quarter of the U.S. ammonia production capacity that was operating 1976. Figure 3 shows by state the ammonia plant capacities in operation at year-end 1982 and closed down since 1976. Of the 69 plants currently operating, 61 percent (11.3 million metric tons per year of capacity) is located in major gas-producing states including Texas, Louisiana, Oklahoma, New Mexico, and Alaska. By contrast, two-thirds of the 5.0 million metric tons per year of plant capacity closures have occurred in states served primarily by interstate pipelines. At anticipated 1984 ammonia production levels, it is estimated that these plant shutdowns will result in the loss of approximately 85 bcf of interstate natural gas feedstock and fuel-use sales.

High U.S gas prices (relative to oil-rich nations), low-cost imported ammonia, and reduced domestic demand for nitrogen fertilizers are the major factors contributing to ammonia plant shutdowns and reduced profitability of those plants still operating. In mid 1982, the average price paid for natural gas by U.S. ammonia producers was $\$2.80/10^3$cf distributed as follows:[5]

% Capacity	Range ($\$/10^3$ cf)	Average ($\$/10^3$ cf)
19	less than 1.99	0.63
15	2.00 – 2.99	2.86
42	3.00 – 3.49	3.17
24	more than 3.50	3.77

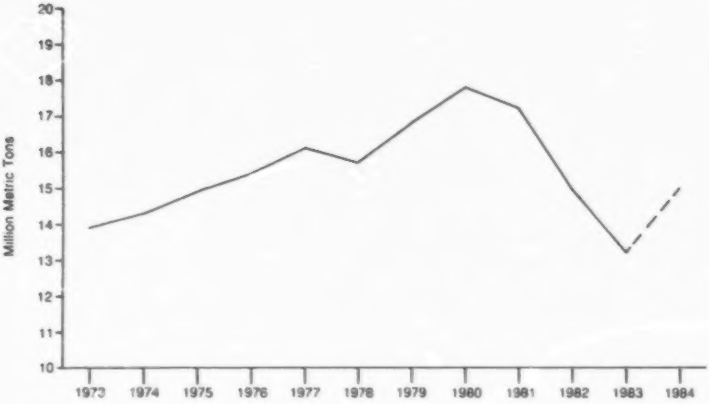
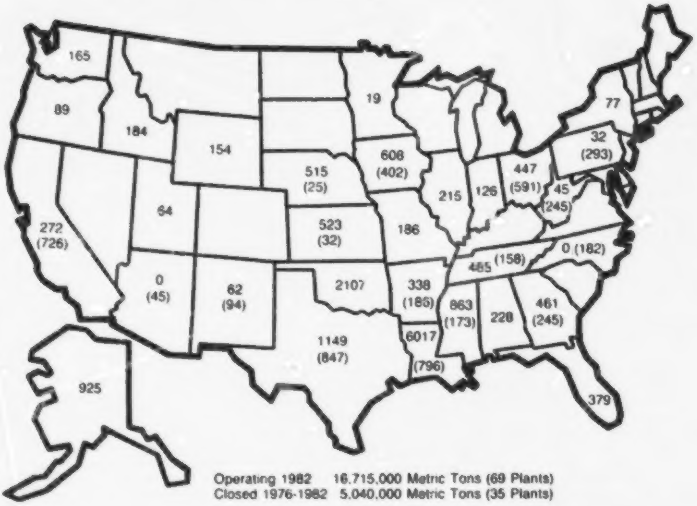


Figure 2. U. S. Ammonia Production. (Source: Refs. 1, 3, 4.)



Operating 1982 16,715,000 Metric Tons (69 Plants)
Closed 1976-1982 5,040,000 Metric Tons (35 Plants)

Figure 3. Ammonia Production Capacity at Year-End 1982 and, in Parentheses, Ammonia Capacity Closures Over the Period 1976-82 (Thousand Metric Tons/Year). (Source: Ref. 5.)

As indicated in Table 1, a $2.80/10³ cf gas price contributes to over 60 percent of the total production cost for a typical ammonia plant and an $11/metric ton net loss on a full-recovery-cost basis. At $162/metric ton, the current peak seasonal market price for ammonia, a $2.50/10³ cf gas price would be required to break even on this basis. On a cash basis (i.e., excluding capital cost recovery), ammonia producers can break even at gas prices up to $3.30/10³ cf.

The gas consumption rate assumed in Table 1, 37.5 10⁶ Btu/metric ton of ammonia, was adopted from Chem Systems, Inc. estimates for the American Gas Association[3] for ammonia plant technology coming on stream in 1981. State-of-the-art technology being incorporated into new Canadian ammonia plants reportedly will lower gas consumption rates by about 25 percent, ranging from 27 to 28X10⁶ Btu/metric ton.[6,7] Even with these much improved efficiencies, ammonia production economics become marginal, at best, with U.S. gas prices. At the $2.80/10⁶ Btu shown in Table 1, state-of-the-art efficiencies would reduce natural gas costs to about $68.50/metric ton resulting in a total production cost of $145/metric ton and about a 4 percent return on investment. This small profit margin would be eliminated, however, under new contract gas prices. Many plants still operating are doing so on a cash basis or are taking advantage of regionally higher ammonia market prices. Only about 3 million metric tons per year of capacity still benefit from old gas contracts ranging from $0.35-$0.70/10³ cf.

In February 1983, gas pipeline acquisition costs (i.e., prices paid to producers) peaked at $3.24/10⁶ Btu and have since declined by 10.5 percent to $2.90/10⁶ Btu in early 1984. Following this pattern, the gas price for industrial sales by major pipelines declined over 9 percent from a peak of $4.50/10⁶ Btu in April 1983 to $4.08/10⁶ Btu in February 1984. Even at these U.S. gas prices, a market price of $175-225/metric ton of ammonia would be required to stimulate any significant increases in domestic ammonia production.[8] Top market prices, however, have generally been below $165/metric ton, but could reach higher levels as demand rises following an end to the government's agricultural acreage set-aside program.

Table 1. Ammonia Production Costs (1982 $) Using Current Technology Basis (Source: Ref. 5)

Plant Capacity:	1000 Metric Tons/Day	
Annual Production:	340,016 Metric Tons/Yr	
Natural Gas Use:	37.54X10^6 Btu/Metric Ton	
Capital Investment:	$140 Million	
Fixed Costs	$1000/Yr	$/Tonne
Labor & Materials	4,819	14.17
Overhead	5,284	15.54
Depreciation	10,105	29.72
Subtotal	20,208	59.43
Variable Costs		
Utilities, Catalyst and Chemicals	2,903	8.54
Natural Gas @ $2.80/$10^6$ Btu	35,744	105.12
Subtotal	38,647	113.66
Total Cost of Production	58,855	173.09
Ammonia Market Value @ $162/Tonne	55,083	162.00
Net Loss	(3,772)	(11.09)

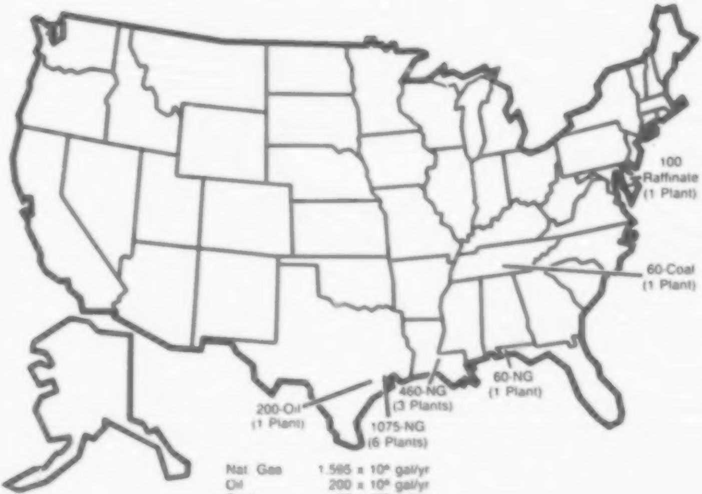
In 1982 the U.S. imported 2.2 million metric tons of ammonia primarily from the USSR, Mexico, Canada and Trinidad. In contrast to U.S. gas prices, Mexican ammonia producers pay an average of $0.44/$10^3$ cf, which contributes only $16.50/metric ton to the ammonia production cost.[9] Until recently, the U.S. exported about 1.0 million metric tons of ammonia annually. Exports have dropped sharply in the last few years and now amount to only about half the historic levels.

Historically, U.S. ammonia production has been somewhat cyclic as producers respond to agricultural fertilizer demands. The cyclic nature of this market will likely continue in the future, but it is doubtful that domestic ammonia production will ever exceed 1980 production levels. World ammonia production, on the other hand, is projected to grow from just over 100 million metric tons per year in 1980 to 120-125 million by 1990.[10]

The long-term outlook will depend primarily on the worldwide demand for nitrogen fertilizers and the future of domestic natural gas prices. One recent analysis[9] indicates the need for up to 180 new and replacement ammonia plants worldwide to keep pace with increases in world population. Although industrial gas prices have recently stabilized and declined, their relatively high level compared with other major ammonia-producing nations, coupled with low utilization rates, suggests that U.S. ammonia capacity will remain stable, at best, through 1990. World capacity is expected to increase from 118 to 165 million metric tons per year over the same period.[10,11]

Methanol (CH_3OH)

Methanol is produced by a reaction of carbon monoxide and hydrogen made by steam-reforming natural gas or heavier hydrocarbons. There are presently 13 methanol plants in the United States with a combined production capacity of nearly 1,925 million gallons per year. Natural gas is used as a feedstock in 10 plants representing 1,595 million gallons per year of capacity. Two plants use oil or refinery by-product, while the remaining facility, operated by Tennessee Eastman, uses a coal-based process to produce methanol that is further processed onsite to acetic anhydride. Shown in Figure 4 are the locations of methanol production plants. The natural-gas-based facilities are located exclusively in Texas, Louisiana, and Florida and are directly supplied by producers or intrastate gas pipelines.



Nat. Gas	1,595 × 10^6 gal/yr
Oil	200 × 10^6 gal/yr
Coal	60 × 10^6 gal/yr
Other	100 × 10^6 gal/yr
Total	1,955 × 10^6 gal/yr

Figure 4. Methanol Production Capacity at Year-End 1982 (Million Gallons/Year).
(Source: Ref. 5.)

Except for 1981, when domestic methanol production peaked at 1.3 billion gallons, annual production over the past decade varied between 0.85 and 1.1 billion gallons. Production in four of the last five years has been 1.1 billion gallons, which accounted for consumption of 77 bcf of natural gas feedstock and 54 bcf of natural gas fuel annually. Production forecasts for 1984 total about 1.25 billion gallons, citing continuing economic recovery and increased fuel-use applications as underlying reasons for the higher estimates.[4] Figure 5 shows U.S. methanol production history over the past decade.

The greatest demand for methanol is as a chemical intermediate for further processing into formaldehyde, acetic acid, and methyl methacrylate, which together compose 53 percent of the methanol market as shown in Figure 6.

Formaldehyde, used in the production of adhesives for plywood and particle board, insulation, and plastics represents the largest single share and in 1981 accounted for 37 percent of methanol demand. Acetic acid is a rapidly growing market for methanol and currently accounts for about 12 percent of demand. The market demand for acetic acid includes applications in construction materials and paints as well as textile and paper coatings. Although demand for acetic acid has been relatively stable at 1.3 to 1.5 billion pounds per year over the past decade, methanol's growing share of this market has resulted from development of a methanol carbonylation process that has proved to be more economical than the existing ethylene oxidation route. Should the entire U.S. production of acetic acid eventually convert to the methanol carbonylation process, the demand for methanol for this market segment could increase from 150 million gallons presently to 235 million gallons annually. Production of methyl methacrylate accounts for an additional 4 percent of methanol use and ultimately finds market outlets as acrylic sheets and various surface coatings.

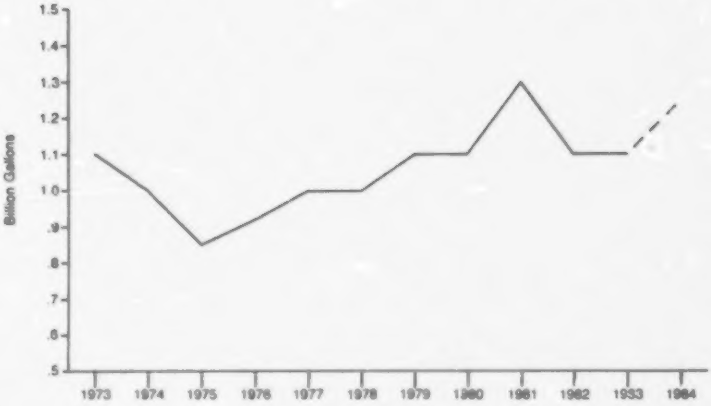


Figure 5. Methanol Production (Billion Gallons). (Source: Refs. 1, 3, 4.)

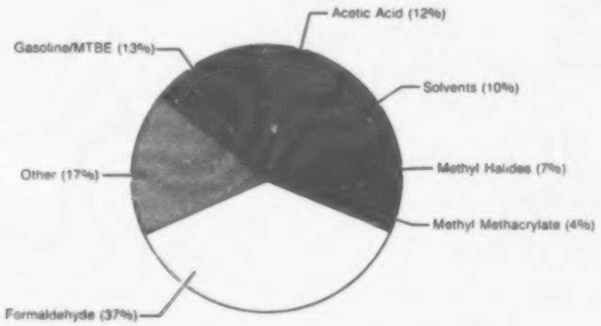


Figure 6. Breakdown of 1981 U. S. Methanol Demand (1.3 Billion Gallons).

Industrial solvents and other uses, primarily dehydration agents, represent 27 percent of total methanol demand. Methyl halides, which represent 7 percent of the methanol market, are used in the manufacture of silicon rubber and various pesticides and herbicides.

The newest market outlet for methanol, and the only end use with a potential for high growth in the future, is the fuel-use market, which consumed about 150 million gallons of methanol in 1982. The high octane quality of methanol makes it an attractive blending component for gasoline. However, there remains some controversy over using increased quantities of methanol and methanol derivatives as octane-enhancing constituents in automotive fuels. During the last several years, the use of methanol and methanol-derived cosolvents for gasoline blending has increased significantly. The gasoline additive methyl tertiary butyl ether (MTBE), made by an acid-catalyzed reaction of methanol and isobutylene, has consumed significant quantities of methanol as its use grows as an octane booster for unleaded gasoline. More recently, a 1:1 blend of methanol and gasoline-grade tertiary butyl alcohol (GTBA) has been marketed by ARCO under the trade name Oxinol as an octane-enhancing gasoline additive.

Currently, neat methanol (pure methanol without a cosolvent) is permitted in gasoline at concentrations only up to 0.3 percent.[3] This small amount has been allowed to absorb any water in the gasoline and thereby reduce icing problems in cold weather. However, methanol blends are reportly used in more than 2 percent of all gasoline now sold in the United States.[12] Most of the methanol being used is under waivers previously granted to ARCO and American Methyl. The ARCO waiver allows blending of GTBA and methanol up to 4.6 percent by volume when the ratio of methanol to GTBA is 1:1. The waiver for American Methyl allows a volumetric methanol content of up to 12 percent, with a ratio of methanol to cosolvent of 6.5:1.[13]

Ford Motor Company is testing a specially produced fleet of 587 methanol-powered Escorts, most running on a fuel comprised of 90 percent methanol mixed with 10 percent unleaded gasoline. Over 500 of these vehicles are being tested in California, mostly by state agencies; more than a dozen were bought by the state of Pennsylvania promoting methanol made from coal while others were purchased by government agencies in Sweden and New Zealand.[14,15]

While Ford is demonstrating methanol-fueled vehicles, other U.S. and foreign auto manufacturers are opposed to high concentrations of methanol in gasoline. General Motors is concerned only about cases where the methanol content exceeds 5 percent by volume. Chrysler and Toyota have expressed more serious concerns. Owner manuals for 1984 Chryslers, for example, warn motorists not to use gasoline containing methanol and that doing so may void the manufacturer's warranty.[13] AMOCO has recently run full-page ads in leading newspapers stating that it does not add methanol to any of its gasolines and that methanol-blended gasolines reduce vehicle mileage rates.

Amoco's claims are supported by General Motors test results comparing the fuel economy of gasoline and 90% gasoline/10% methanol blends using stock engines and carburetors. GM's tests showed almost idential volumetric fuel consumption at steady-state speeds less than 30 miles per hour. Above 30 miles per hour, however, the fuel economy of the gasoline/methanol blend dropped sharply to 10-15 percentage points below the levels achieved by straight gasoline.[16]

The volumetric energy content of methanol is about half that of gasoline (64,150 Btu/gal vs. 123,360 Btu/gal). Addition of methanol to gasoline reduces the fuel energy content and, if carburetion is not adjusted for the change, results in a leaner air/fuel mixture supplied to the engine. In older cars with relatively rich carburetion, the leaning effect of a blend can improve thermal efficiency and compensate for the loss in energy content, so that a net increase in fuel economy is possible. However, because most late model cars either run lean or stoichiometric, further leaning by a blend degrades fuel economy. For this situation, volumetric fuel economies can be lower and cost per mile higher because of the lower energy content of the gasoline/methanol blend compared with straight gasoline. Carburetor adjustments could compensate for some loss in fuel economy, but such adjustments are not allowed under existing environmental regulations.

The economics of neat (100%) methanol as a transportation fuel are considerably different from the economics of gasoline/methanol blends. Although the volumetric energy content of methanol is approximately one-half that of gasoline, the higher octane number of methanol permits the use of higher-compression-ratio engines, which allow gains in thermal efficiency. A fully optimized methanol-fueled engine can achieve up to a 15 percent improvement in thermal efficiency over its gasoline-fueled counterpart.[17] Therefore, neat methanol fuel priced at \$9.35/10^6 Btu (\$0.60/gal) is equivalent to gasoline priced at \$8.10/10^6 Btu (\$1.00/gal). On a miles-per-gallon basis, engine efficiency improvements only partially offset the lower volumetric energy content of methanol compared with gasoline. The miles per gallon of methanol could be as much as 40 percent lower than the miles per gallon of gasoline. This means that the methanol-fueled vehicle would require a 67 percent larger fuel tank to maintain driving range between fillings.

Other automotive problems can occur with volumetric concentrations of methanol in gasoline above 10 to 15 percent. First, methanol is hydroscopic and tends to absorb moisture until phase separation occurs. Even with 10 percent neat methanol in gasoline, phase separation will occur at only a few tenths of a percent water at temperatures below freezing. The heavier water-methanol layer tends to accumulate at the bottom of the tank and may be charged to the engine, which then will not run.

The deviation of methanol-gasoline mixtures from ideal solution behavior can also cause problems with vapor lock. Figure 7 shows that the addition of even small quantities of neat methanol to gasoline increases the Reid vapor pressure of the mixture disproportionately. At very large concentrations, in excess of 75-80 percent methanol, the Reid vapor pressure drops sharply below the typical gasoline value of 7 psi. In order to maintain an acceptable vapor pressure in gasoline-methanol mixtures of less than 75 percent methanol, butanes and pentanes must be withdrawn from the gasoline blending stock. The economics of this procedure depends on the alternative uses for the withdrawn hydrocarbons, which currently have relatively low market values.

Methanol may also corrode many of the materials used in automobile fuel systems, including lead in the tanks and aluminum and zinc in the carburator and fuel pump. Methanol also swells rubber and plastic components. Although some progress has been made with corrosion inhibitors, wide use of high methanol-to-gasoline ratio mixtures would likely require the adoption of new materials for auto fuel systems.

While methanol is a much cleaner burning fuel than gasoline, at least one auto manufacturer contends that the addition of methanol to gasoline increases evaporative emissions at the filling station by anywhere from 30 to 110 percent and that it shortens the life of catalytic converters installed on new engines. Drivability and cold-start problems resulting from the high latent heat of methanol are also disadvantages associated with very high concentrations of methanol, in excess of 85-90 percent.

As a result of these problems with methanol-gasoline mixtures, market penetration beyond the range of 5-10 percent of gasoline consumption will be difficult unless one or more of the following contingencies occur:

- Gasoline prices rise more rapidly than methanol prices. With deregulation of natural gas, its price will tend to rise with oil prices making this possibility unlikely. However, if oil and gas prices rise to the point where methanol production from coal becomes competitive, it may be the oil-coal price differential that ultimately determines the market penetration of methanol.

- In a manner typical of new industries, the real price of methanol could fall due to cost decreases that occur as the methanol fuels industry grows. This also is unlikely for natural-gas-based methanol production since the feedstock and fuel already account for over two-thirds of the production cost.

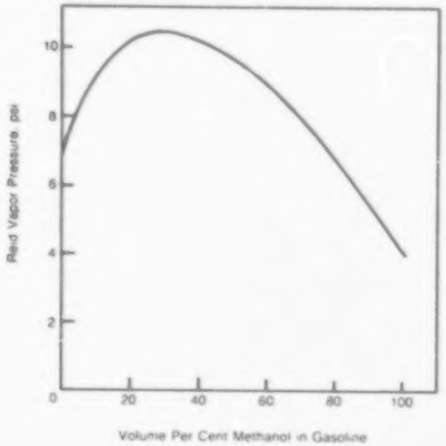


Figure 7. Effect of Methanol on Gasoline Reid Vapor Pressure. (Source: Ref. 10.)

- Governments could choose to tax methanol at a lower rate than gasoline in order to offset its competitive disadvantage. At world oil prices projected in GRI's Baseline Projection, there is really not much incentive for government intervention.

In 1983, list prices for methanol at the Gulf Coast were around \$0.72/gallon with some discounting below that level. By early 1984, large-volume list prices had dropped to the \$0.40-\$0.45/gallon range at the plant site.[3-4] Table 2 itemizes natural-gas-to-methanol production costs for current technology operating at 93 percent stream factor and consuming 119.5 cubic feet of natural gas per gallon of methanol output. Costs are based on a \$2.80/10^6 Btu natural gas price, which accounts for \$0.33 of the \$0.50/gallon total production cost. At an early 1983 methanol market value of \$0.72/gallon methanol producers could expect to earn \$0.22/gallon, corresponding to a very acceptable 24 percent return on investment. At \$0.40 to \$0.45/gallon, current methanol prices are about equivalent to the cash cost of production (i.e., excluding depreciation charges and any return on investment).

This recent price drop is a result of a significant over capacity of methanol facilities in the United States. Total present capacity is 1,955 million gallons and, with production at 1,250 million gallons in 1983, the average industry-wide oporating rate was 64 percent. But in 1983 an estimated 500 million gallons of capacity did not operate or operated only intermittently resulting in an average stream factor of 88 percent for those facilities still on line.

With over two-thirds of the methanol production cost made up of variable costs, primarily natural gas feedstock and fuel, the economics of methanol production are not strongly dependent on moderate changes in plant stream factors. At gas costs of \$2.80/10^6 Btu and methanol prices at \$0.72/gallon, a reduction in plant factor from 93 to 88 percent results in a drop in return on investment from 24 percent to 22 percent. Natural gas price has a much more dramatic impact on methanol production economics. Figure 8 shows the impact of increasing gas price on gas-to-methanol plant return on investment (ROI) at various methanol prices. Also shown are the 1983 GRI baseline projected regional industrial gas prices for 1990 in four regions where new methanol production capacity might be installed near existing refineries if gasoline additive demand increases significantly.[19] Figure 8 suggests that return on methanol plant investment is strongly dependent on gas price, declining by as much as 15 percent for every \$1/10^6 Btu increase in gas price. The figure also suggests that, at projected future gas prices, the West South Central region, where most U.S. methanol is currently produced, holds a significant production cost advantage over other regions.

Table 2. Gas-to-Methanol Production Costs(1982 \$) on a Current Technology Basis (Source: Ref. 5)

Plant Capacity: 1000 Metric Tons/Day
Annual Production: 113.5 Million Gallons/Year
Natural Gas Use: 0.1195X10^6 Btu/Gallon
Capital Investment: \$102 Million

Fixed Costs	**\$1000/Yr**	**¢/Gal**
Labor & Materials	4,228	3.72
Overhead	4,491	3.96
Depreciation	8,245	7.26
Subtotal	16,964	14.94
Variable Costs		
Utilities, Catalyst and Chemicals	2,070	1.82
Natural Gas @ \$2.80/10^6 Btu	37,988	33.45
Subtotal	40,058	35.27
Total Cost of Production	57,022	50.21
Market Value @ 72¢/Gal	81,756	72.00
Return on Investment (ROI)	24,734	21.79
Percent ROI	24%	

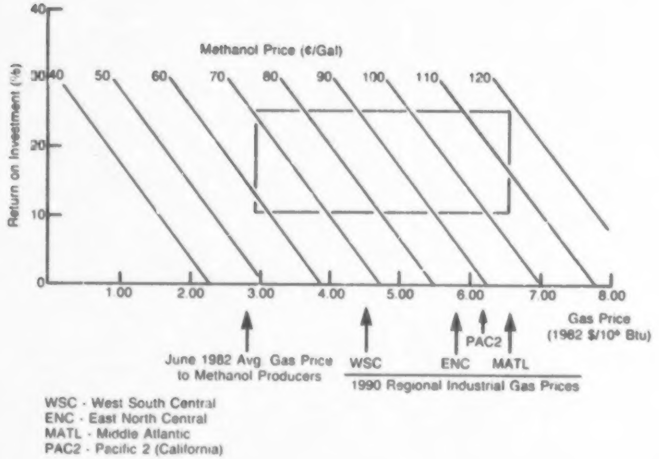


Figure 8. Impact of Gas Price on Methanol Plant Return on Investment.

Production costs alone are not the only criteria that will determine the location of possible future methanol plants — transportation costs are also a factor. Transportation costs will depend on the mode of transportation, which, in turn, is determined by the production location and ultimate destination of the methanol. Today, the primary method for moving methanol from the Gulf Coastal region to Midwest and East Coast markets is by barge at recently quoted prices of \$0.05 to \$0.08/gallon. Transportation to major West Coast markets is by rail at a cost approaching \$0.15/gallon.[20] By comparison, projected regional natural gas price differentials in 1990 (and beyond) would add anywhere between \$0.15 and \$0.25/gallon to the methanol production costs. This implies that any new methanol from natural gas production facilities that could be needed if gasoline additive demand grew significantly would likely remain in the West South Central (Gulf Coastal) region. California is the only possible exception, with delivered costs from the Gulf Coast approaching local production costs.

Coal-based methanol production is technically feasible, but these plants are much larger and more capital intensive than the natural-gas-based technology. New contract coal prices range from \$35 to \$45/ton or \$1.70 to \$1.90/10^6 Btu. Assuming 93 percent stream factor and a ROI of 15 percent (conservatively low), Figure 9 indicates a methanol production cost from coal-based syngas of \$1.17 to \$1.20/gallon. These costs are equivalent to the current natural-gas-based technology at natural gas prices of \$7.40 to \$7.60/10^6 Btu

The most recent methanol plant to come on stream is owned by Tennessee Eastman Company and uses coal-based syngas to make methanol, which is reacted with by-product acetic acid to produce methyl acetate. The methyl acetate is catalytically reacted with carbon monoxide to produce 500 million pounds per year of acetic anhydride, which is further processed into cellulose esters used in photographic film, plastics, cigarette filters, and textile yarns. Although methanol from coal is generally more costly than methanol from natural gas, Tennessee Eastman's situation is unique for several reasons. Because of economies of scale, a coal-based plant has to be ten times the size of one that feeds on natural gas, and Eastman's requirement for acetic anhydride is large enough to justify the plant scale that's necessary. Furthermore, the facility is close to large sources of coal and enables the company to shut down half of its existing, oil-to-ethylene-based acetic anhydride capacity. At current prices of \$0.20/lb for ethylene, the carbon in ethylene is two to three times more expensive than the carbon in coal-based syngas.[21]

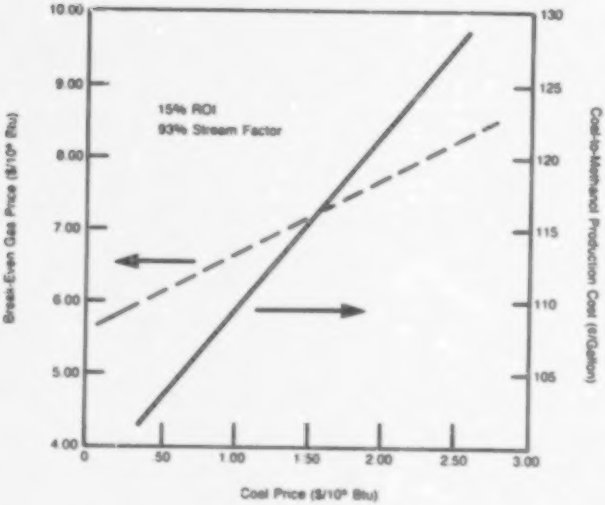


Figure 9. Coal-to-Methanol Production Costs and Break-Even Gas Prices (1982 $).

As a result of the current overcapacity of methanol production facilities in the U.S. and the institutional and oil price factors restraining growth in the fuels market, no new methanol plants are expected in the United States for the remainder of this decade. Any increase in methanol demand over this period should easily be supplied by existing capacity. Generally, coal-based methanol will not be a viable competitor until around the end of the century based on GRI's projections of natural gas and coal prices.

Similar to the situation faced by the ammonia industry, foreign producers of methanol from inexpensive gas sources will become an increasing threat to domestic production. Although no new capacity is expected in the United States, world capacity by 1990 is expected to reach 10-11 billion gallons per year, more than doubling the 1980 capacity of 4.6 billion gallons.[22]

Some of this additional production may be consumed in the European automotive fuels market, which is currently moving toward wider use of unleaded gasolines.[23] Europe consumes 36 billion gallons of gasoline annually, over 80 percent of which is high-octane grade. With the move toward unleaded fuels, primarily for environmental reasons, the European Economic Community has proposed a limit of 10 percent alcohol by volume as an octane enhancer. Methanol would be limited to 3 percent and used with a cosolvent. This could mean an increased demand of about 1 billion gallons of methanol annually for the European fuels market by 1990.

Even with increased demand in Europe, methanol imports could hamper U.S. production. Import levels have risen over the past few years with 1984 imports estimated to be about 150 million gallons, up from a 1983 import level of 100 million gallons. Exports have declined proportionally to 50 million gallons estimated for 1984 from 100 million gallons in 1983.[4] As natural gas prices increase, so also will the economic potential for imported sources of methanol to supply any increases in U.S. demand.

Hydrogen (H_2)

Excluding hydrogen already accounted for in ammonia and methanol synthesis, U.S. industry consumes approximately 1,120 bcf of hydrogen annually. Although difficult to determine from available data sources, it is estimated that currently about 70-75 percent of this amount is the product of steam reforming of natural gas.[2] Much of the remainder is produced by purification of hydrogen by-product streams from various chemical conversion processes. In 1980 an estimated 820 bcf of hydrogen was produced from natural gas, which accounted for the consumption of 205 bcf of feedstock methane, second only to that of ammonia. On a Btu basis, steam reforming of natural gas requires equivalent amounts of feedstock and fuel. Fuel is used primarily for steam generation. As shown in Figure 10, however, the largest users of hydrogen from natural gas are refineries and large chemical producers, many of whom have waste steam and by-product fuels available to reduce their natural gas fuel requirement. Thus, it is estimated that only an additional 100 bcf of natural gas is consumed as a reformer fuel.

Of the 820 bcf of hydrogen produced from natural gas in 1980, about 130 bcf, or 63 percent, was consumed in oil refining processes. In the past, many refiners had excess by-product hydrogen, which was often burned to satisfy process heater fuel requirements. This situation is now changing, and as U.S. refiners move toward processing lower quality crudes, many are running into a hydrogen deficit. While refiners obtain vast quantities of hydrogen from the crude oil they process, many of them still find this insufficient to meet their required demand. The net balance, however, is a function of the type of crude being processed and the slate of products produced by the refiner.[34]

Catalytic reformers that convert naphtha into benzene and other high-octane components are the biggest single source of by-product hydrogen at refineries, releasing 500-900 cubic feet of hydrogen per barrel of naphtha feed. Present U.S. capacity for catalytic reforming is 4 million barrels per day, so at full capacity the U.S. refining industry has anywhere from 700 billion to 1.3 trillion cubic feet of by-product hydrogen available from this source. But refineries also consume large amounts of hydrogen. Thus, refiners have had to install an additional 1 trillion cubic feet per year of hydrogen capacity from various feedstock sources.

Refinery requirements for hydrogen are growing as they are increasingly called upon to process heavy crudes. Heavy crudes contain large quantities of sulfur that must be removed by hydrodesulfurization. At the same time, the refinery product slate includes higher percentages of lighter products. In effect this means that the ratio of hydrogen to carbon atoms in the final slate is increasing. Hydrogen-to-carbon ratios can be increased either by adding hydrogen or removing carbon, and refiners do both. Some carbon is removed by employing a number of processes on residual oil including visbreaking, deasphalting, and delayed coking. But an increasing number of refiners are beginning to add hydrogen in order to maximize high-value final products.

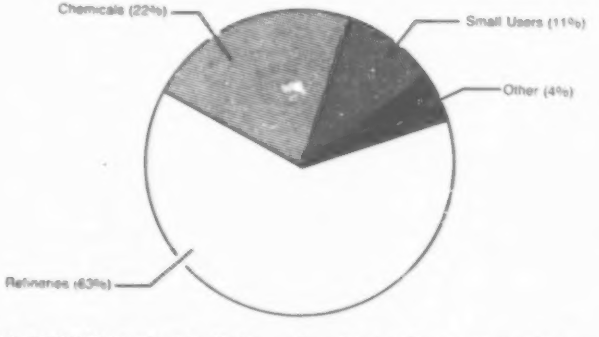


Figure 10. 1980 U.S. Demand for Hydrogen from Natural Gas, Excluding Hydrogen for Ammonia and Methanol Production (820 bcf of H_2).

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Hydrocracking and hydrodesulfurization units have the largest hydrogen requirements. Hydrocrackers will use 1500-2000 cubic feet of hydrogen per barrel of heavy crude. Hydrodesulfurization units, on the other hand, require 200-500 cubic feet of hydrogen feed per barrel to remove sulfur and improve the color of the higher distillates. On net balance, a 100,000 barrel per day refinery needs upwards of 60 million cubic feet per day of hydrogen to process a dirty crude. About 15 million cubic feet per day is readily available from the process. The remaining 45 million cubic feet per day must either be made or recovered from tail gases, which contain spent hydrogen from hydrotreating processes.

When make-up hydrogen is needed, steam reforming of natural gas is the preferred method of production. Steam-reformed hydrogen at the refinery site might currently be valued at about \$3.50 per thousand cubic feet.[23] Adding hydrogen to a heavy crude can upgrade its value by \$5-\$7/barrel, which, on a net-back basis, plays an important role in the prices quoted for various quality crudes by OPEC.

While steam reforming of natural gas is now the preferred method of making supplemental hydrogen in refineries, partial oxidation of heavier feedstocks may offer operational advantages in some cases. Basically, partial oxidation is a controlled combustion process that burns hydrocarbons in an oxygen-deficient atmosphere, converting the hydrocarbon to carbon monoxide and hydrogen. The technique requires the capital and operating costs of an air-separation plant to provide the oxygen. Although partial oxidation may not currently be economical on a widespread basis, it does offer the advantage of being able to handle a range of feedstocks including crude oil and residuum. Given the dynamic nature of refinery economics, the flexibility of partial oxidation may be beneficial at some locations.

The future demand for hydrogen in refining operations is extremely difficult to project because of variabilities in crude quality, product slate and geographic location. The demand for natural gas as a feedstock for refinery hydrogen production, therefore, is even more tenuous and additional analyses are needed to make an accurate forecast.

The situation for large chemical facilities that use hydrogen produced from natural gas is not too dissimilar from that of the refineries. In 1980 large chemical producers consumed 22 percent (180 bcf) of hydrogen manufactured from natural gas. Many of these firms also consumed as process feed or fuel additional amounts of hydrogen generated as a by-product in a variety of processes. By-product hydrogen is worth \$2.00-\$3.00 per thousand cubic feet, depending on its source. As a fuel it has only one third the Btu value of natural gas and is equivalent to natural gas priced at \$6.00-\$9.00/10^3 cf.

With industrial natural gas prices generally below this level, many chemical companies are reevaluating their uses of by-product hydrogen as fuel. Again, the net impact on natural gas demand is almost impossible to estimate. The simplest alternate use of excess by-product hydrogen is to sell it to a hydrogen merchant for purification and resale to other users. If natural gas is the alternative fuel, then the chemical firm would require an additional 320 cubic feet of natural gas for every 1000 cubic feet of by-product hydrogen fuel displaced. On the other hand, if the by-product hydrogen displaces steam reforming of natural gas as a source of merchant hydrogen, then the merchant's demand for natural gas would be reduced by about 500 cubic feet for every 1000 cubic feet of by-product hydrogen received.

Most merchant hydrogen is purchased and consumed by a variety of small users, together composing about 15 percent of the demand for hydrogen from natural gas. Small users include specialty chemicals, pharmaceuticals, edible fats and oils, metals, electronics, and float glass industries. Not all hydrogen consumed by this segment of the market is purchased from hydrogen merchants. Many small users in the foods, metals, and specialty chemicals industries have plant hydrogen demands in excess of 100-150 million cubic feet per year making it economically viable to produce their requirements onsite by steam reforming of natural gas. The pharmaceuticals, electronics, and float glass industries, on the other hand, purchase most of their hydrogen requirements. Of the more than 100 bcf of hydrogen consumed by small users, about half is supplied by hydrogen merchants.

Prices paid for merchant hydrogen depend on the users' demand, transportation costs, and level of purity required. In general, customers with demands less than 1 million cubic feet per year pay between \$30 and \$60/10^3 cf. Users with larger demands may pay down to around \$8.00/10^3 cf for bulk deliveries, while "over the fence" pipeline hydrogen currently sells for \$3.50-\$4.00/10^3 cf.[25,26]

The electric industry has suggested that advanced electrolysis could be a cost-competitive onsite technology for many consumers of merchant hydrogen. Figure 11 shows the hydrogen production costs from an advanced electrolysis process assuming 90 percent cell efficiency and 4.5¢/kWh electricity costs. Also shown are the production costs for hydrogen from natural gas reforming. The crossover point for the two curves falls at about 100 million cubic feet per year; needs below that point are served primarily by hydrogen merchants. The future of the advanced electrolysis technology depends on a number of critical factors. First, electrolysis cell efficiencies are now typically around 70 percent, and industrial elec-

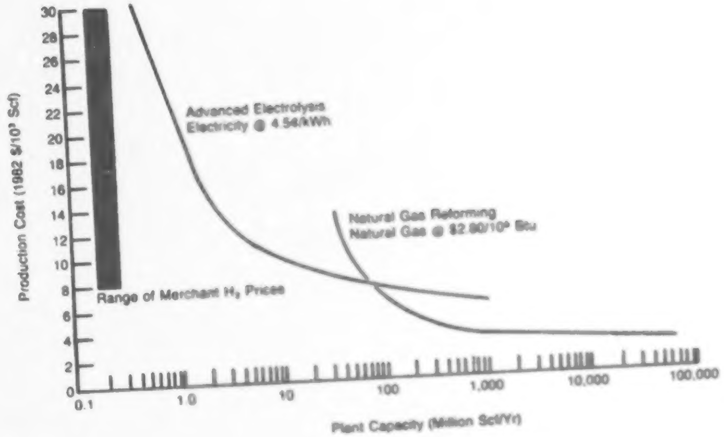

Figure 11. Hydrogen Production Costs Versus Plant Capacity for Industrial Users.
(Source: Adapted from Ref. 26.)

tricity prices for 1990 are forecast to reach 6.5¢/kWh. These two factors would add about $\$3.25/10^3$ cf of hydrogen to the electrolysis costs. In the same time period, natural gas prices could rise to $\$6.00/10^6$ Btu, adding only $\$2.00/10^3$ cf of hydrogen to the reformer costs.

The other factor influencing the future of advanced electrolysis is the willingness of many small users to undertake onsite hydrogen production as part of their operations. For many small users, the pattern of hydrogen demand and purity requirements may be the key factors influencing the make or buy decision. Where only intermittent demand exists, or where extremely high purity is required (e.g., in the electronics industry), it may be more attractive to purchase merchant hydrogen.

The future of the hydrogen market, particularly that part of the market produced from steam reforming of natural gas, is highly uncertain. The complexities of the largest segments of the market — refineries and large chemical producers, which account for 85 percent of the hydrogen demand — make it difficult to project meaningful forecasts. The merchant hydrogen market is probably safe from the threat of advanced electrolysis, and many of the high-value-added industries that it serves are expected to continue to grow. Some of the natural gas reforming, which supplies most of this market segment, however, could be displaced by by-product hydrogen now used as fuel. But this loss could also be buffered if natural gas is substituted for the hydrogen fuel.

Carbon Black (C)

Carbon black is a very finely divided, essentially nonporous carbonaceous material that is produced in a precisely controlled pyrolytic process. Carbon black ranges from fine particles such as those used in tire treads to the coarser particles used in the main body of tires.

Almost 90 percent of carbon black produced goes into reinforcing and compounding agents for rubber. Motor vehicle and aircraft tires account for roughly 60-65 percent of carbon black consumption in a given year. Carbon black increases strength, resilience, and abrasion resistance of rubber, as well as adding color. The rubber compound in modern tires contains perhaps 30-40 percent carbon black. Carbon black is also used in printing inks, plastics, coatings, and paints.

Carbon black is produced from both oil and natural gas feedstocks. Oil is by far the dominant feedstock, accounting for more than 90 percent of the 1.2 to 1.5 million tons per year of carbon black production. Natural gas feedstock makes up the remainder and in 1980 accounted for the consumption of 22 bcf of natural gas feedstock and an additional 2 bcf natural gas fuel. Most of the carbon black plants, 16 of 23, are located in Texas and Louisiana.

Carbon black is currently produced by two basic conversion processes, partial oxidation and cracking. Cracking is used by only one natural-gas-based plant in the United States with a capacity of 50 million pounds per year. Partial oxidation is used in all other oil-and-gas based facilities. During the 1960's and 1970's, partial oxidation of oil gained popularity because of better product quality and superior economic performance relative to partial oxidation of natural gas.

Carbon black production reached a peak in 1978 when 1.7 million tons were produced in the United States. By 1981 production had declined by roughly 18 percent and by 1982 production had declined more than 25 percent from the 1978 level. The decline in output of carbon black is due to reduced consumption in motor vehicle tires and mechanical rubber goods, a decline in exports, and inventory reductions on the part of carbon black producers and tire manufacturers. Although overall tire shipments increased slightly in 1982 relative to 1981, tire production declined by almost 10 percent as tire manufacturers reduced inventories built up in anticipation of a rubber workers' strike early in 1982. Exports of carbon black declined by 40 percent between 1981 and 1982 due to the worldwide recession.

The lower level of demand for carbon black in the face of general overcapacity resulted in a number of plant closings during the early 1980's. Nearly 500,000 tons of carbon black capacity has been permanently shut down since 1979 as producers sought to reduce costs. Operating rates in 1982 averaged roughly 70-75 percent of capacity. In addition to overcapacity and reduced demand, rising feedstock and energy costs affected profitability as actual selling prices were heavily discounted.[27]

With about 60 percent of consumption in tires, the outlook for carbon black is dependent on the continuation of a variety of economic and technical trends with regard to motor vehicle production and use that have been underway for the past decade. The transition to long-wear radial tires for automobiles will continue, with radials being installed on all new domestically produced cars and most imports. The same trend is underway in the truck tire market. Although radial tires cost more than bias-ply tires, the increased cost is offset by longer tire life. Increased energy costs in the early 1980's also led to fewer miles driven and less tire wear. Also affecting carbon black consumption are the federally mandated vehicle fuel consumption goals, which are prompting automobile downsizing. Smaller cars mean smaller tires. At the very best, demand for carbon black in the United States will be flat during the rest of the decade. More likely, there will be a slow, steady decline in the demand for carbon black.

Exports and imports of carbon black have, in the past, been a relatively small percentage of total domestic production. While production in 1982 is estimated at 1.2 million tons, exports during that period were only 38,500 tons, while imports were estimated at 17,500 tons.

The situation will change, however. Foreign competition in the carbon black market is likely to increase in coming years, with much of the competition coming from Mexico. Plans in Mexico to increase carbon black production have alarmed domestic carbon black manufacturers, especially in depressed states like Louisiana. It is expected that foreign carbon black, either in granular form or directly in tires, will be imported into the United States in increased quantities. Imported carbon black could reach 5 to 10 percent of domestic consumption in this decade, which, at current production levels, would be a three to sixfold increase in imports.

As a result of these factors, natural gas consumption as a feedstock in the production of carbon black will fall dramatically from its 1980 level of roughly 22 bcf as reported by the Bureau of Census. Residual oil is clearly the preferred feedstock. Oil-based processes offer greater advantages in controlling product quality, which led carbon black producers to switch to oil over the past two decades even in the face of relatively low gas prices. This being the case, it is difficult to envision natural gas being used as a feedstock to produce carbon black in the declining and more competitive market of the future.

Outlook for Bulk Chemicals from Methane

The past several years have seen dramatic decline of interstate natural gas sales for feedstock (and associated fuel) purposes. Most of the impact felt by interstate pipelines has been a result of the shutdown of a quarter of the U.S. ammonia industry as demand fell and gas prices rose to uneconomic levels.

At best, the market outlook for bulk commodity chemicals produced from feedstock methane is uncertain. In the near term, possible increases in methanol and hydrogen production, representing just over 35 percent of the current feedstock and associated fuel uses, may tend to offset further anticipated declines in ammonia and carbon black production, which make up most of the remaining use of methane feedstock. Beyond the near term, even with the potential for a large growth in methanol demand as a fuel additive, domestic production of ammonia, methanol, and carbon black is significantly threatened by foreign producers who have access to natural gas supplies valued at a factor of 10 less than new contract U.S. natural gas prices. International market and gas cost factors so dramatically influence the future outlook of U.S. bulk chemicals produced from methane that incremental improvements to existing processes offer little optimism for changing the near-term outlook.

Because of transportation costs, hydrogen is the only bulk chemical produced from methane that is not threatened by foreign competition. The small merchant hydrogen portion of this market is reasonably safe from coal and electrolytic technologies. However, the future of the majority of hydrogen production from natural gas depends heavily upon intricate supply, demand, and process balances inherent to the U.S. refining and chemicals industries.

R&D Status

The fundamental problem in converting methane (and most paraffinic hydrocarbons) into other commercial products is the chemical stability of the methane molecule. The bonds in methane are among the most unreactive in hydrocarbons, with its tetrahedral geometric and electronic structure making it difficult to react with other molecules. Reactions that methane does undergo are usually irreversible and difficult to control. Typically, it reacts only with highly active substances, or under very vigorous conditions. Examples of such reactions include:

combustion or complete oxidation

$$CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$$

controlled oxidation

$$6CH_4 + 6O_2 \xrightarrow{1500°F} \underset{\text{(acetylene)}}{2(CH = CH)} + 2CO + 10H_2O$$

hydrolysis or steam reforming

$$CH_4 + H_2O \xrightarrow[\text{catalyst}]{550°F} CO + 3H_2$$

halogenation

$$CH_4 + X_2 \longrightarrow CH_3X + HX;\ x = F, Cl, Br$$

The chemical industry invests billions of dollars annually on process-related research looking for more controllable and cost-effective methods for producing useful commercial products. After many years of neglect, there has been a recent worldwide interest in C_1 chemistry — reactions of methane, carbon oxides, and other single-carbon compounds.[28,29] For example, the Japanese government and industry is supporting a multimillion dollar R&D effort in this field. Various petrochemical companies in the United States are also looking for new and dependable feedstocks. Benson[30] has proposed a new process to make useful commercial products from methane without reforming to carbon monoxide and hydrogen. The Benson Process, developed at the University of California Hydrocarbon Research Institute, involves the chlorination of methane to chloromethane, followed by decomposition of the chloromethane to ethylene* and acetylene. The hydrogen chloride formed in each of these steps must be recycled in an economical way in order to commercialize the process.

The Soviets[29] claim to have discovered new reactions called oxidative methylation, which involve reactions between C_1 to C_4 alkanes (paraffins) and compounds containing a methyl group. In general, compounds of the type RCH_3 (where R can be a number of entities) are reacted with methane in the presence of oxygen to produce $RCH_2\text{-}CH_3$, $RCH = CH_2$, or RH. The Soviets claim that the oxidative methylation of toluene or acetonitrile has economical promise, and that natural gas as withdrawn from the well is ideal for this application because it contains the required C_1 to C_4 initiating alkanes. One of the chief attractions of oxidative methylation could be the replacement of natural gas for ethylene as a feedstock for a number of petrochemicals. In the United States, researchers at Texas A&M University have demonstrated the partial oxidation of methane to methanol by nitrogen oxides.

Controlled activation of carbon-hydrogen bonds is an important area of growing interest in catalytic research. The goal of this research has been to activate paraffinic carbon-hydrogen bonds selectively by catalytic means and to substitute or insert another molecule into the paraffin. Researchers hope that, if this can be done selectively, it may provide routes to further hydrocarbon conversions that avoid the high energy requirement of oxidation while also providing greater selectivity and control over important hydrocarbon conversions. Thus far there has been very limited success with carbon-hydrogen bond activation. Researchers at DuPont have used lutetium complexes to exchange hydrogen atoms on the methane molecule. Other researchers have successfully added an iridium complex to various normal, cyclic, and isoparaffins. Although none of the reactions that have thus far been achieved have any industrial application for petrochemicals, they are significant in a basic research context and may help focus further research in catalytic hydrocarbon reactions.[32,33,34]

Other, more-near term catalytic research is also underway. For example, TRW, Inc., under contract with the Department of Energy, is developing a catalytic process that would produce a mixture of carbon monoxide and hydrogen (syngas) with an optimum ratio of CO:H for making methanol. The process, called Selox (for selective oxidation), may be an improvement over the current steam reforming process, which, by contrast, generates too much hydrogen for methanol and other liquid fuels.[35] A number of major oil companies are also active in catalytic research. Mobil Oil Company, for example, is involved in a joint venture with the New Zealand Government to produce nearly 5 million barrels per year of high-octane unleaded gasoline. The process involves methanol synthesis from natural gas, followed by conversion of methanol to gasoline using Mobil's ZSM-5 zeolite catalyst. Gulf Research and Development Company has also developed a catalytic process that produces nearly equal quantities of naphtha and diesel fuel oil from natural gas. This process is entering the demonstration phase and is targeted for unmarketable remote gas locations.

Biotechnology is another important area of long-term research. Recent demonstrations that specialized organisms can be "bred" to perform a myriad of tasks have propelled the science of biotechnology to the forefront. Further development of this technology is likely to have significant impacts on the energy industry. Although no bioconversion process currently exists based on methane, biotechnology has practical applications in the pharmaceutical and agricultural industries. Enzymes have also been developed that aid in the clean-up of oil spills. The development of bioconversion processes for methane could, in the long term, help to replace the current thermally driven chemical conversion processes with less-energy-intensive biological routes.

In the near term, biotechnology could indirectly affect the chemical feedstock industry and, specifically, natural gas, through the development of nitrogen-fixing bacteria or the modification of crops to assimilate nitrogen more readily. The possibility of genetically altering a seed that would reduce requirement for fertilizers would result in decreased ammonia and, subsequently, decreased methane demand. The extent of the effect that bacterial innoculants or genetically altered seeds will have on the U.S. and world fertilizer industry, however, is unknown at this time.[36]

Implications

The overwhelming magnitude of market factors in shaping the near-term future of feedstock methane suggest that there is little opportunity for gas industry research on existing commodity chemical processes to significantly alter these trends. The petrochemical industry's continued attention to process and market optimization is perhaps the best near-term route to improvements in existing processes.

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* Ethylene is a major petrochemical feedstock for many commercial products, and it ranks sixth among U.S. bulk chemicals. About 12-15 million tons of ethylene are produced annually in the U.S. by cracking natural gas liquids, naphtha and heavier hydrocarbons.

New processes, such as the Benson process, applied catalytic research, or other routes to manufacture specialty chemicals from methane may offer some future opportunities. The outlook presented for bulk chemicals from methane is based on current technology and near-term improvements. New reactions and processes that could more efficiently convert methane into liquid fuels or other commercial chemicals, or small onsite units using catalytic conversion, partial oxidation or biological techniques could affect future production costs and markets. The partial oxidation of methane to methanol by nitrogen oxides, for example, has been reported by researchers at Texas A&M University. While the commercial potential for this process may be limited, it is one of several notable examples of new advances in methane conversion chemistry.

New avenues to methane conversion should be pursued when there is reasonable expectation that successful results will lead to technical or economic benefits for the gas industry and its customers. Presently, much of the gas used in the petrochemical industry, especially in the case of methanol, is sold directly by producers and is therefore outside of GRI's jurisdiction. Methanol, for example, is produced in large plants located near sources of natural gas by inefficient means in which methane is first broken down into carbon monoxide and water. Concepts like direct catalytic oxidation of methane to methanol or other liquid fuels in small onsite units suggests a potential for increasing the use of pipeline-transported natural gas. Onsite production of other smaller volume chemicals, such as hydrogen cyanide, could offer the same potential benefit for interstate natural gas, in addition to reducing overland shipments of toxic or hazardous materials.

Perhaps the greatest opportunities for GRI research are associated with carbon-hydrogen bond activation and bioconversion. There is currently little known about these mechanisms, and basic research to improve the understanding of the methane molecule holds the potential of significant long-term benefits to the regulated gas industry and its customers.

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Appendix B

ENERGY ANALYSIS

AGA
American Gas Association

Policy Evaluation & Analysis Group
American Gas Association
1515 Wilson Boulevard
Arlington, VA 22209
703-841-8400

1985-7

April 26, 1985

THE OUTLOOK FOR AMMONIA PRODUCTION IN THE U.S.

Digest

For the past decade, it has been the view of most analysts that ammonia produced from new U.S. plants would be unable to compete in the future with ammonia imported from new plants abroad. Recent events have called into question the underpinning assumptions of this conventional view.

The decontrol of new natural gas prices in the U.S. has been accomplished, and natural gas prices are declining. Similarly, the outlook for U.S. natural gas production is far brighter than had been expected. Annual U.S. additions to proved natural gas reserves are now at twice the level of a decade ago. When conservation effects are considered, the supply of natural gas available for new uses in the U.S. is expected to continually increase.

At the same time, the capital (construction) and other cost components of ammonia production have been inflating more rapidly than the feedstock components worldwide -- particularly in developing nations. Since U.S. ammonia production already had a capital cost advantage (due to existing infrastructure, proximity to suppliers, etc.), the increasing relative importance of the capital component has worked to the advantage of U.S. production.

As a result of these developments, the economic attractiveness of the U.S. as a site for new ammonia capacity has increased markedly. The national average cost of ammonia produced from a new U.S. plant beginning construction today is estimated to be between 5% more to 63% less than the comparable cost of ammonia imported from newly constructed foreign plants. If the dollar returns to "normal" historical levels of the early-and mid-1970s, the relative economic attractiveness of new U.S. ammonia plants will be further enhanced.

Approximately 1.8 million metric tons of idle U.S. ammonia capacity has recently been reactivated (an additional 1.8 million metric tons are still idle). It seems extremely likely that as the world ammonia market tightens, the U.S. will be an attractive source of incremental capacity.

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THE OUTLOOK FOR AMMONIA PRODUCTION IN THE U.S.

A. INTRODUCTION

For the past decade, it has been the view of most analysts that ammonia produced from new U.S. plants would be unable to compete in the future with ammonia imported from new plants abroad. Consequently, it has been believed that few, if any, new ammonia plants would be built in the U.S.

The principal rationale for this view was based upon a projected continued growth in the difference between natural gas fuel and feedstock prices in the U.S. and many export-oriented gas producing countries. Gas prices in the highly developed U.S. market had risen sharply in the 1970s under federal controls, and much of U.S. production was to be price decontrolled on January 1, 1985. In contrast, natural gas was thought to have little value in those producer countries with relatively undeveloped transportation and utilization infrastructures. The resulting difference in feedstock costs between U.S. and foreign ammonia plants was expected to more than offset the many cost advantages of U.S. ammonia producers (e.g., proximity to market).

Recent events have called into question the underpinning assumptions of this conventional view. The decontrol of new natural gas prices in the U.S. has been accomplished, and natural gas prices are declining. Similarly, the outlook for U.S. natural gas production is far brighter than had been expected. Annual U.S. additions to lower-48 states proved natural gas reserves are now at nearly twice the level of a decade ago. When conservation effects are considered, the supply of natural gas available for new uses in the U.S. is expected to continually increase. Finally, the capital (construction) and other cost components of ammonia production have been inflating more rapidly worldwide than the feedstock components -- particularly in developing nation locations. Since U.S. ammonia production already had a capital cost advantage (due to existing infrastructure, proximity to suppliers, etc.), the increasing relative importance of the capital component has worked to the advantage of U.S. production.

The purpose of this analysis was to evaluate the economics of ammonia production for the U.S. market.

B. EXECUTIVE SUMMARY

The fundamental economic tradeoff between foreign-sourced versus U.S.-sourced ammonia has shifted. Even with today's strong dollar, the economic attractiveness of the U.S. as a site for new ammonia capacity has increased markedly. It seems extremely likely that when new world ammonia capacity becomes necessary, the U.S. will be an attractive site.

- The national average cost of ammonia produced from a new U.S. plant beginning construction today is estimated to be between 5% more to 63% less than the comparable cost of ammonia imported from newly constructed foreign plants. (See Exhibit B-1).
  - These ammonia cost differentials incorporate estimated costs for nine potential producer nations. For developing countries, they also include a range of costs based upon site-specific variations, e.g., degree of existing infrastructure.
  - Compared to an estimated "plant gate" cost of $256 per metric ton (1985 dollars) for ammonia produced from new plants in the U.S., the cost ranges vary from $240-349 per metric ton in the Western Hemisphere and from $256-405 per metric ton in the Eastern Hemisphere (see Exhibits B-1 and C-2).
- The 1-2 million tons of idle U.S. ammonia capacity will be the first candidate as an incremental source of ammonia supply. According to the Fertilizer Institute, the average plant investment in currently operating U.S. ammonia capacity for the year ended June 30, 1984 was $114 per short ton ($125 per metric ton) -- half of the estimated cost of new U.S. capacity. The average plant gate cost of ammonia produced from plants in the U.S. as of that time was $120 per short ton ($132 per metric ton). While the cost of producing ammonia from the idle capacity may be somewhat higher, the World Bank projects that two-thirds of the idle capacity will reopen.
  - According to the U.S. Department of Commerce, about 6 million short tons (5.4 million metric tons) of U.S. ammonia capacity were closed from 1979 to 1983. Two million tons (1.8 million metric tons) were closed permanently, over two million tons (1.8 million metric tons) have been reactivated, and the balance will be reactivated when the price of U.S. ammonia reaches about $200 per short ton ($220 per metric ton).[24]
- Measured against a market basket of seven currencies, the value of the U.S. dollar has increased over 65% between 1980 and 1985. If the dollar returns to "normal" historical levels of the early-and mid-1970s, the relative economic attractiveness of new U.S. ammonia plants will be further enhanced (see Exhibit B-2).

EXHIBIT B-1

ESTIMATED COST OF AMMONIA FROM NEW PLANTS

	USA existing capacity	USA new capacity	Other Western Hemisphere	Eastern Hemisphere
CAPITAL INVESTMENT* (New Capacity: Million 1985 U.S. Dollars)	--	$185	$206-282	$209-282
(Idle Capacity: Million nominal dollars incurred when plants were built)	41	--	--	--
PRODUCTION COSTS (1985 U.S. Dollars Per Metric Ton)				
Capital Recovery	8	103	115-178	132-178
Natural Gas Fuel & Feedstock	99	96	32- 96	32- 96
Other Costs	25	57	57- 74	57- 74
TOTAL PRODUCTION COST	132	256	219-284**	221-320**
SHIPPING AND TERMINALLING (1985 U.S. Dollars Per Metric Ton)	--	--	25- 65	35- 95
TOTAL LANDED COST IN USA (1985 U.S. Dollars Per Metric Ton)	$132	$256	$244-349**	$256-405**

---

* Capital investment includes offsites. Cost for presently operating U.S. capacity taken from Ammonia Production Cost Survey -- Year Ended June 30, 1984 (Washington, D.C., The Fertilizer Institute, September 27, 1984). Figures were converted from short tons to metric tons by A.G.A.

** Columns are not additive since, for example, the upper range of capital recovery cost does not occur in a country in which natural gas costs are in the upper range.

EXHIBIT B-2

EXCHANGE VALUE OF THE DOLLAR
(Weighted Average Exchange Rate Index
In 7 Major Trading Partners)
(1972 = 100)

Actual		Forecast	
1972	100.00		
1973	91.6	1985	144.1
1974	95.6	1986	136.1
1975	93.9	1987	125.0
1976	101.7	1988	117.5
1977	101.2	1989	114.9
1978	89.8	1990	112.1
1979	97.2	1991	108.1
1980	86.9	1992	104.5
1981	99.2	1993	101.3
1982	115.7	1994	97.6
1983	127.0		
1984	139.9		

Source: Long-Term Forecast (Philadelphia, PA, Wharton Econometric Forecasting Associates, December 1984), p.52; and, Long-Term Historical Data (Philadelphia, PA, Wharton Econometric Forecasting Associates, September 1984), p.20.[23]

EXHIBIT B-3

WORLD BANK
NITROGEN FERTILIZER SUPPLY/DEMAND BALANCE BY REGION
(Million Metric Tons of N)

REGION	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1992/93
Developed Market Economies	- 1.50	- 1.28	- 0.60	- 0.73	- 1.48	- 2.07	- 4.76
Developing Market Economies	- 1.98	- 1.77	- 1.33	- 1.16	- 1.31	- 1.14	- 5.64
Centrally Planned Economies	3.46	3.66	3.52	3.25	2.91	2.30	- 1.90
TOTAL WORLD	- 0.02	0.61	1.59	1.36	0.12	-0.91	-12.30

Source: William F. Sheldrick, World Fertilizer Review and the Changing Structure of the World Fertilizer Industry - a paper presented at the Australian Fertilizer Manufacturer's Conference, Perth, Australia, Washington, DC, Industry Department, World Bank, November 1984, p. 8.

Note: A minus indicates a current or projected nitrogen deficit. Nitrogen is the principal element in ammonia from a fertilizer perspective.

- The results of this analysis strongly imply that, of probable sites for new ammonia plants, only those in the Western Hemisphere (and possibly Nigeria) could expect to compete with U.S. sites. Most sites in the Middle East, and Austral-Asia are unlikely to be able to compete for the U.S. market. Even in the Western Hemisphere, only sites with the most favorable circumstances (such as a well-developed infrastructure and low gas price) are likely to be competitive.

  - New Canadian projects face higher capital costs than U.S. projects, and gas costs that are relatively close to (but lower than) U.S. gas costs (see source 1, page 19). In addition, Canadian ammonia faces high rail delivery and terminalling costs. On the other hand, Canadian sites are relatively close to regional ammonia markets in the U.S., and the Canadians have demonstrated their ability and willingness to be competitive. In all probability competition between new U.S. and Canadian ammonia plants will be severe -- but Canada does not have an advantage.

  - New Mexican and Trinidadian projects generally face higher capital investment costs and lower utilization rates than projects in the U.S. or Canada. Many of the usual factors which drive up construction costs in developing nations are at work in Mexico and Trinidad, e.g., high general inflation, remoteness from suppliers, etc. Ammonia from many potential Mexican and Trinidadian ammonia projects will not be competitive in U.S. markets. On the other hand, in those situations where there is an existing support infrastructure, the Mexican and Trinidadian construction costs may be quite similar to those in Canada. Growing infrastructure and experience, low imputed gas costs to ammonia plants, and proximity to the U.S. market mean that competition among Mexican, U.S. and possibly Trinidadian ammonia will be significant.

  - The U.S.S.R. remains an uncertainty, since the constraints of capitalist economics may not necessarily apply. It seems unlikely, however, that Soviet ammonia from new plants will be competitive (without government subsidy) in U.S. markets in the foreseeable future.

- There appears to be a reasonable consensus among analysts that new additions to world ammonia capacity will be required sometime in the 1988-1992 timeframe. Given at least a four year planning and construction period, serious planning for new plant construction seems likely to be needed within the next two or three years (see, for example, Exhibit B-3).

- In addition to the need for new plants to meet growing demand, the World Bank/UNIDO/FAO Industry Fertilizer Working Group points out that substantial new capacity will be needed to compensate for retirements of existing plants. The Group concludes that as many as eighty new plants may be needed worldwide in the 1988-1994 time period.
- The Group also points out that developing nations will be increasingly in nitrogen deficit in the second half of the 1980s, and will depend increasingly upon imports from Eastern European countries.

C. PROJECTED AMMONIA ECONOMICS

The purpose of this section of the analysis was to assess the economics of producing ammonia from alternative world locations to service future U.S. ammonia requirements.

1. Costing Methodology and Assumptions

In this analysis the estimated landed cost in the U.S. Gulf of anhydrous ammonia produced from new plants in nine alternative worldwide locations was compared to the estimated cost of ammonia from both existing idle plants and new plants sited in the U.S. Gulf. The costs were based upon new plants to be ordered in 1985-86 and operational in 1988-89.

The cost estimates in this analysis were all derived from published documents and ammonia trade sources. None of the cost estimate data was provided by A.G.A. members. All of the costs were necessarily rough estimates, and would clearly be insufficient as a basis for ordering new plant capacity at any particular site. They are, however, considered to be meaningful for a general comparison.

a. Capital Cost of New Plants

The capital investments required to build new ammonia plants in various world locations were derived from two publications authored by William F. Sheldrick, Industry Department, World Bank: (i) World Fertilizer Review and the Changing Structure of the International Fertilizer Industry, a paper presented at the Australian Fertilizer Manufacturer's Conference, Perth, Australia, November 1984;[1] and (ii) Investment and Production Costs for Fertilizers, a paper presented at the Food and Agriculture Organization of the United Nations, Commission on Fertilizers, Ninth Session, Rome, Italy, February 19-22, 1985.[2]

The capital cost projections from sources 1 and 2 were based upon a standard plant with nameplate capacity of 1000 metric tons/day of ammonia and 1700 metric tons/day of urea. Offsites were included. A range of cost estimates reflected, among other considerations, the degree of existing infrastructure.

For the A.G.A. analysis, investment costs per ton of annual urea capacity (from source 1, page 24) were multiplied by 544,500 tons of urea/year nameplate capacity (from source 2, page 10) to derive the total capital cost for the ammonia/urea plant complexes. The cost of a 1000 metric ton/day nameplate ammonia-only plant was then derived from the cost estimates for the ammonia/urea plant complexes. This step required estimating the proportion of total costs attributable to ammonia, then adding adequate refrigerated storage and handling costs for a plant intended to export anhydrous ammonia, and finally escalating the 1984 source numbers to 1985 dollars.

The proportion of capital cost attributable to ammonia in this standard ammonia/urea complex was taken from study documents presented by the Division of Industrial Studies of the United Nations Industrial Development Organization (UNIDO) at the Fourth UNIDO Consultation on Fertilizers, New Delhi, India, January 23-27, 1984, as reported in "Capital Costs of Fertilizer Plants," Nitrogen, No. 149, May-June 1984, pp. 30-34.[3] The proportion used, 62.5%, was the proportion used (source 3, p. 33) in a standard UNIDO ammonia/urea complex (1000 mt/d:1700 mt/d). A survey of actual cost experience in nitrogenous fertilizer plants, reported in source 3, showed a mean average proportion attributable to ammonia of 54%, and a mean average attributable to ammonia plus all utilities (ammonia plus urea) of 74%. The 62.5% of total cost attributed to ammonia in the UNIDO model seemed quite consistent with the results of the survey.

The cost of storage in the standard UNIDO model was 5.0% of the total capital cost. This was increased to 10% to allow for the higher cost of anhydrous ammonia export storage as compared to urea storage. While this was admittedly a rough estimate, it seemed consistent with cost estimates for ammonia terminalling in the U.S. Gulf (as reported below), taking into account that, while ammonia storage is more costly than urea storage, the ammonia output of the standard plant is only 60% of the tonnage of the output when urea is the final product.

In order to escalate these capital cost estimates to a 1985 U.S. dollar basis two factors were considered. First, the 1984-85 increase in the value of the U.S. dollar as measured by an exchange rate index for seven major U.S. trading partners was projected to be 3.0% (Source: Long-Term Forecast, Philadelphia, PA, Wharton Econometric Forecasting Associates, December 1984).[4] Second it was possible to estimate the actual rate of escalation experienced in recent years in the dollar cost of 12 ammonia/urea plant complexes from source 3, page 34. Source 3 adjusted the capital costs of the 12 plants to a 1978 basis. By comparing the actual capital cost and the 1978 basis cost, and knowing the startup date, the average compound escalation rate of 3.7%/year was calculated for the 12 plants. When plants showing zero escalation were excluded, the average was 5.1%/year. On this basis, an intermediate figure of 4.5% was used to escalate from 1984 to 1985 dollars.

Working capital requirements were estimated at a net 60 days total costs in the U.S., Canada and Australia, and a range of 90-120 days costs elsewhere. Costs included capital recovery (under utilization assumptions described below) as well as fuel, feedstock, labor and other operating costs.

The annual charge for capital recovery (plant plus working capital) was calculated on a simple 12 year, 15% discounted cash flow project rate of return basis. For the sake of consistent comparison of all cases, tax considerations and debt/equity questions were not considered. This treatment may have tended to overstate the actual commercial cost of ammonia from new U.S. plants.

Average capacity utilization was assumed to be 90% for plants located in the U.S., Canada and Australia, and 80% elsewhere. While 90% utilization is a common goal (i.e., actual output equalling 90% of nameplate capacity), this level is reportedly seldom achieved in the early years of plant operation in developing nation locations. According to a recent article in Nitrogen magazine, "...70% operation from start-up is seldom achieved...To achieve reasonable economics the project would have to operate at better than 80% capacity from start-up, which is a very challenging target for a new plant in a developing country location, even if there is previous experience in this technology (Source: "New Investment -- the Cost and Price Conundrum," Nitrogen, No. 151, September-October 1984, page 6).[5] On the other hand, according to source 1, many developing nations are now ultimately achieving 90% utilization. The assumption of a "time value" average of 80% utilization for plants in developing locations thus seemed reasonable for the base case.

The annual capital recovery charge was divided by output (nameplate capacity multiplied by capacity utilization) to determine the capital charge per ton.

b. Plant Fuel and Feedstock Costs

For purposes of the base case the cost of natural gas to new ammonia plants was assumed to be $3/MMBtu in the U.S. and Australia, $2/MMBtu in Canada, and $1/MMBtu elsewhere.

In the U.S. the average cost being charged to ammonia plants for the year ending June 30, 1984 was $2.53/MMBtu according to Ammonia Production Cost Survey, Washington, D.C., The Fertilizer Institute, June 30, 1984, page 6.[6] The national average wellhead price of gas at that time was $2.59/MMBtu according to the Natural Gas Monthly, Washington, D.C., U.S. Energy Information Administration, December 1984 Issue (published February 1985), page 23.[7] Given current market conditions -- a 15-20% gas deliverability surplus, large additional volumes available from Canada, and considerable price flexibility -- average real U.S. dollar wellhead and retail gas prices are projected in the current A.G.A.-TERA Base Case Analysis to be 15% lower and 12% lower, respectively, by 1987 than in 1984. A gradual increase is projected to return wellhead and retail prices to 1984 levels by the end of the century (Sources: A.G.A.-TERA Base Case 1985-I, Arlington, VA, American Gas Association, March 22, 1985;[8] and Historical and Projected Natural Gas Prices: 1985 Update, Arlington, VA, American Gas Association, March 15, 1985).[9] The assumption of a $3/MMBtu average gas cost to new U.S. ammonia plants was, therefore, thought to be conservative for purposes of this analysis. Similarly, these charges were considered to be reasonable to conservative compared to current gas pricing in Australia.

In Alberta, existing Canadian ammonia plants have been reported to be paying $1.50-$2.00/MMBtu for natural gas. (Source: John Douglas, Tennessee Valley Authority, Muscle Shoals, AL, by private communication with the American Gas Association, April 10, 1985.)[10] Under the newly signed Western Accord, the Alberta border price for natural gas will be $2.15/MMBtu until a new domestic pricing formula is established on or before November 1, 1985. (Souce: Canadian Federal, Provincial Governments Agree to Ease Controls on Petroleum Industry," International Gas Technology Highlights, Vol. XV, No. 8, April 15, 1985.)[11] Given the trend toward market-determined pricing in both the U.S. and Canada, there may be decreasing reason to expect a significant difference in the price of natural gas feedstock to ammonia plants between the two countries. In order to be conservative, however, the Canadian price was assumed to be $2/MMBtu for natural gas to new plants.

The use of a $1/MMBtu charge for gas to the new developing country ammonia plants was consistent with source 1, pages 18 and 24. Clearly, the cost to be charged is often somewhat arbitrary, particularly in the case of the U.S.S.R. Gas costs of 50¢/MMBtu or less have been reported for some projects in the past (source 5, page 5). The $1/MMBtu charge for new projects seemed a reasonable assumption for the base case. Much of the easily utilized flare gas has already been utilized, and the marginal cost of producing new gas in developing countries is probably typically in this range.

A World Bank Energy Department study in 1983 found a marginal city-gate cost of new gas production in 10 developing countries to range from 61¢/MMBtu to $1.79/MMBtu (1983 dollars). (Source: Marginal Cost of Natural Gas in Developing Countries: Concepts and Applications, Washington, D.C., World Bank, August 1983, p.i.).[12] The report also found that the marginal cost was consistently below the opportunity cost (source 5, page 14). By comparison, source 1 reported that "The opportunity cost of gas for ammonia manufacture, therefore, in many areas of the world with large resources of natural gas is likely to be between $1.00-2.50 per MMBtu" (source 1, page 18).

Total estimated fuel and feedstock costs per metric ton for ammonia were calculated by multiplying the assumed natural gas price times the gas consumption per ton of ammonia produced. Gas consumption of 32 MMBtu/metric ton was assumed, consistent with source 2, page 8 and source 5, page 5.

Average consumption in existing U.S. plants was reported by the Fertilizer Institute as 35.95 MMBtu/short ton (39.65 MMBtu/metric ton) for the year ended June 30, 1984 (source 6, page 6). Source 2 argued that this figure was consistent with consumption of 35 MMBtu/metric ton for a new plant in 1980, declining to 32 MMBtu/metric ton for a new plant to be ordered today. These figures for urea plants were closely consistent with those of Chem Systems, Inc., which projected average consumption for new U.S. plants of 33.77 MMBtu/metric ton in 1985 and 32.08 MMBtu/metric ton in 1990 (Source: The Outlook for Natural Gas Use in Methanol and Ammonia Production in the U.S., Houston, TX, Chem Systems, Inc. for the American Gas Association, March 1983, p. 51.[13] The assumption that new U.S. and foreign plants will achieve the same gas consumption per ton may slightly understate the relative cost of ammonia from foreign plants.

c. Other Ammonia Production Costs

Other ammonia production costs included catalysts, chemicals and cooling water; labor; overhead; maintenance; insurance; etc.

Catalyst, chemical and cooling water costs were taken from source 2, page 8. The total of labor, overhead, maintenance, insurance and miscellaneous were estimated at 31% of capital investment (excluding working capital) in the U.S. and Canada and 28% of capital investment elsewhere. These assumptions were roughly consistent with a number of sources, including source 2, page 10. The Chem Systems study had estimated 35% for a new 1981 U.S. plant (source 13, page 49). These figures may understate the relative cost of foreign ammonia, because maintenance and insurance costs may be higher in foreign locations, and the lower cost of foreign labor may be offset by higher numbers employed and expensive expatriate labor.

d. Total Ammonia Production Costs

The estimated ammonia production costs derived for new plants in this analysis were compared to published sources for reasonableness.

The 1983 Chem Systems estimate of $253.63/metric ton for a 1981 plant at 15% rate of return (source 11, page 49) was adjusted to the $3.00/MMBtu gas price used in this analysis, and the costs were escalated from 1983 dollars to 1985 dollars using the GNP deflator (source 5, page 7). On this basis the Chem Systems estimate was $261.16/metric ton, as compared to $256/metric ton derived in this analysis.

It is noteworthy that both of these estimates result in an ammonia cost for new plants that is on average roughly twice the cost of ammonia from existing U.S. plants (source 6, page 6). On the other hand, to the extent that market prices are today somewhere between U.S. average production costs and the cost of production from newer plants, actual reported Southeastern U.S. ammonia prices in the $200/ton range lend credence to the $256/ton calculated herein (Source: "Fertilizers Had a Super Year," Chemical Week, July 18, 1984, p. 300).[14]

The cost calculated in this study for ammonia from new Canadian plants of $274+/metric ton was well above reported market prices in the $150/ton range (see, for example, source 14, page 31). This analysis, however, omitted the high cost of terminalling and rail shipping

Canadian ammonia to U.S. markets. These costs and the higher costs of building ammonia plants in Canada compared to the U.S. Gulf (due to such factors as freight and climate) are known to be a serious impediment for Canadian ammonia if the price of fuel and feedstock gas is comparable to that in the U.S. (see, for example, "A Profile of Western Canada," Nitrogen, No. 148, March-April 1984, p. 27;[15] and, source 1, p. 24). Furthermore, the value of the Canadian dollar is at record lows against the U.S. dollar (Source: M.L. Wernecke "What Happened to the Canadian Dollar?," Wharton Economic News Perspectives, March 18, 1985, p. 2),[16] an export cost advantage which is unlikely to last indefinitely.

The current costs for ammonia exported from other world sources, as reported in such sources as Nitrogen magazine, were naturally lower than the projected costs from new plants. They were high enough, however, to indicate that the range of cost estimates calculated in this analysis was not unreasonable.

e. Marine Shipping Costs

The projected costs of shipping liquefied anhydrous ammonia in refrigerated marine tanker ships from foreign locations to the U.S. were taken from: Mats Anderson, Proship, Ltd., New York, NY, by private communication with the American Gas Association, March 18, 1985;[17] and, from Barry Shove, A.L. Burbank Marine Services Ltd, London, England, by private communication with the American Gas Association, March 25, 1985.[18]

The costs shown reflect a range of possible vessel sizes, and estimated breakeven costs for new vessels versus the current (and chronically) depressed shipping rates.

These estimates were checked for reasonableness against several other sources, including: "Vessels Reported as Carrying Ammonia, April-August 1984," Nitrogen, No. 151, September-October 1984;[19] and, Bill Willis, CMI, Inc., Vero Beach, FL, by private communication with the American Gas Association, March 18, 1985.[20]

The cost of rail shipment of Canadian ammonia was unknown by the authors, and was excluded, thus clearly understating the cost of Canadian ammonia.

f. Marine Terminalling Costs

The cost of landing the refrigerated,

anhydrousammonia liquid through marine terminals in the U.S. was taken from source 20. This cost estimate seemed reasonably consistent with previous estimates of the cost of terminalling refrigerated propane gas through U.S. terminals (Source: The Outlook for Propane in Non-Feedstock Markets in the U.S., Arlington, VA, American Gas Association, June 1983).[21]

2. Results of the Economic Analysis

a. Background

Three important factors have impacted the regional economics of ammonia production over the past five to ten years. First, the long-term supply outlook for natural gas in the United States has greatly improved, and the price has stabilized under NGPA decontrol at a much lower level than most analysts had expected. Second, experience and inflation have substantially increased the costs being estimated for building new ammonia plants, particularly in developing nation locations. A study (source 3, p. 30) by the United Nations Industrial Development Organization (UNIDO) found that of fourteen projects analyzed:

> With two exceptions, the projects were not completed on time and the delay varied from 26% to 300% of the period estimated by the owners; the delays were accompanied by cost overruns between 20% and 200% of owners'estimates. It is postulated in the study that there were three fundamental and underlying reasons for these overruns:
>
> > implementation scheduling may have been too strict for developing country conditions (although costs did relate to the planned construction periods, the construction periods themselves proved to have been underestimated);
> >
> > unexpectedly severe inflation in the world economy over the review period (resulting in high cost escalations on delay);
> >
> > unnecessary delays in placing equipment orders. (source 3, page 30)

The third factor, the soaring value of the U.S. dollar, tended to offset the first two factors, to the extent that foreign projects were based upon local currencies. That is, the fundamental improvement in the competitiveness of

U.S. ammonia projects was partially offset by the strength of the dollar (see Exhibit C-1). Measured against a market basket of seven currencies, the value of the dollar has increased over 65% between 1980 and 1985.

As shown in Exhibit C-1, major forecasters are projecting that the dollar will return to "normal" historical levels of the early-and-mid-1970s by the early 1990s. As this happens, the relative economic attractiveness of new U.S. ammonia plants will be increased.

In addition to these three factors, it is probably also true that much of the world's most economically attractive gas has now been utilized. Very low prices (e.g., 50¢/MMBtu) may still be imputed for gas in very remote locations with no infrastructure, but a gradual upward pressure on the marginal production and opportunity costs must be expected.

b. Economic Conclusions

The results of the economic analysis are shown in Exhibit C-2.

It is recognized that the estimated ammonia costs are very approximate and not adequate for planning any individual project. A broad range of estimated costs for most source countries resulted from consideration of varying degrees of existing infrastructure from site to site within each country. Nevertheless, certain conclusions can be drawn from the analysis.

Even with today's strong dollar the economic attractiveness of the U.S. as a site for new ammonia capacity has increased markedly. It seems extremely likely that when new world ammonia capacity becomes necessary, the U.S. will be an attractive site. The close to 2 million tons of idle U.S. ammonia capacity (source 1, page 26) will be the first candidate, and the economics of much of this idle capacity must be attractive, indeed! According to The Fertilizer Institute's survey, the average age of U.S. fertilizer plants as of June 30, 1984 was 12.3 years, and the average plant investment was $114/short ton ($125/metric ton) -- half of the estimated cost of new U.S. capacity. Beyond the idle capacity, however, new U.S. capacity should also prove quite competitive to serve the U.S. market and, possibly, even a limited export market.

The results of this analysis strongly imply that, of sites for new ammonia plants, only those in the Western Hemisphere (and possibly Nigeria) could expect to compete with U.S. sites. Sites in the Middle East and Austral-Asia

EXHIBIT C-1

EXCHANGE VALUE OF THE DOLLAR (WEIGHTED AVERAGE EXCHANGE RATE INDEX IN 7 MAJOR TRADING PARTNERS) (1972 = 100)

Actual		Forecast	
1972	100.00	1985	144.1
1973	91.6	1986	136.1
1974	95.6	1987	125.0
1975	93.9	1988	117.5
1976	101.7	1989	114.9
1977	101.2	1990	112.1
1978	89.8	1991	108.1
1979	87.2	1992	104.5
1980	86.9	1993	101.3
1981	99.2	1994	97.6
1982	115.7		
1983	127.0		
1984	139.9		

Source: Long-Term Forecast (Philadelphia, PA, Wharton Econometric Forecasting Associates, December 1984), p.52; and, Long-Term Historical Data (Philadelphia, PA, Wharton Econometric Forecasting Associates, September 1984), p.20.[23]

EXHIBIT C-2

ESTIMATED COST OF AMMONIA FROM NEW PLANTS

	USA	Mexico	Trinidad	Chile	Canada	U.S.S.R.	Nigeria	Middle East	S.E. Asia/ Indonesia	Australia
CAPITAL INVESTMENT (Million 1985 U.S. Dollars)										
Facilities	$170	$190-250	$190-250	$190-250	$190	$250	$190-250	$190-250	$190-250	$190-250
Working Capital	15	18-31	19-32	19-32	16	32	19-32	19-32	19-32	16-19
TOTAL Capital Investments	$185	$208-281	$209-282	$209-282	$206	$282	$209-282	$209-282	$209-282	$206-269
PRODUCTION COSTS (1985 U.S. Dollars Per Metric Ton)										
Capital Recovery	$103	$130-178	$132-178	$132-173	$115	$178	$132-178	$132-178	$132-178	$115-150
Natural Gas Fuel and Feedstock	96	32	32	32	64	32	32	32	32	96
Catalysts and Chemicals	4	4	4	4	4	4	4	4	4	4
Labor, Overhead, Maintenance, Insurance, and Misc.	53	53-70	53-70	53-70	59	70	53-70	53-70	53-70	53-70
TOTAL Production Cost	$256	$219-284	$221-284	$221-284	$242	$284	$221-284	$221-284	$221-284	$268-320
SHIPPING AND TERMINALLING (1985 U.S. Dollars Per Metric Ton)										
Shipping	—	$ 10-24	$ 10-30	$ 20-50	$ 30-35	$ 20-60	$ 20-50	$ 30-70	$ 30-80	$ 30-70
Terminalling	—	15	15	15	-	15	15	15	15	15
TOTAL Shipping and Terminalling	—	$ 25-39	$ 25-45	$ 35-65	$ 30-35	$ 35-75	$ 35-65	$ 45-85	$ 45-95	$ 45-85
TOTAL LANDED COST IN U.S.A. (1985 U.S. Dollars Per Metric Ton)	$256	$244-323	$246-349	$256-349	$272-277	$319-359	$256-349	$266-369	$266-379	$313-405

are unlikely to be able to compete for the U.S. market. Even in the Western Hemisphere, only sites with the most favorable circumstances (such as a well-developed infrastructure and low gas price) are likely to be competitive.

New Canadian projects face higher capital costs than U.S. projects, and gas costs that are very close to U.S. gas costs (see source 1, page 19). In addition, Canadian ammonia faces high rail delivery and terminalling costs. On the other hand, Canadian sites are relatively close to regional ammonia markets in the U.S., and the Canadians have demonstrated their ability and willingness to be competitive. In all probability competition between new U.S. and Canadian ammonia possibilities will be severe, but Canada does not have the advantage.

New Mexican and Trinidadian projects generally face higher capital investment costs and lower utilization rates than U.S. or Canada. Many of the usual factors which drive up construction costs in developing national are at work in Mexico and Trinidad, e.g., high general inflation, remoteness from suppliers, etc. Ammonia from many potential Mexican and Trinidadian ammonia projects will not be competitive in U.S. markets. On the other hand, in those situations where there is an existing support infrastructure the Mexican and Trinidadian construction costs may be quite similar to those in Canada. Growing infrastructure and experience, low imported gas costs to ammonia plants, and proximity to the U.S. market mean that competition among Mexican, U.S. and possibly Trinidadian ammonia will be significant.

The U.S.S.R. remains an uncertainty, since the constraints of capitalist economics may not necessarily apply. It seems unlikely, however, that Soviet ammonia from new plants will be competitive in U.S. markets in the foreseeable future.

D. PROJECTED AMMONIA SUPPLY AND DEMAND

a. Supply and Demand Methodology

A projection of a world ammonia supply and demand was not a primary objective of this analysis. To provide a context for the economic analysis, however, ammonia supply and demand projections appearing in the current literature were surveyed .

b. Ammonia Supply and Demand Outlook

There appears to be a reasonable concensus among analysts that new additions to world ammonia capacity will be required sometime in the 1988-1992 timeframe. Under some circumstances (e.g., delays in Soviet plants coming on line) the need could be sooner, and a few analysts expect it to occur even later. Given at least a four year planning and construction period, serious planning for new plant construction seems likely to be needed within the next two or three years.

Perhaps the most extensive and credible of the publically available supply and demand analyses is that of the World Bank /UNIDO/FAO Industry Fertilizer Working Group (see source 1). This group builds up its supply figures on a plant-by-plant and country-by-country basis. Its demand figures "... are the result of concensus within the Group after taking into account a variety of methodology [SIC] including trend projections, market surveys, agricultural programs and for countries with large demand, econometric modelling" (source 1, page 6).

The Group's projections are summarized in Exhibit D-1. Their finding is that there will be a need for new capacity after 1987/88, even assuming that all currently idle capacity is brought back on line and assuming that all new capacity comes on line as scheduled. The Group also points out that developing nations will be increasingly in nitrogen deficit in the second half of the 1980s, and will depend increasingly upon imports from Eastern European countries to meet their needs.

In addition to the need for new plants to meet growing demand, the Group points out that the surge in new ammonia plant capacity which occurred in the 1965-1979 period means that new capacity is needed to meet retirements as those plants age. (See Exhibit D-2). The Group concludes that as many as eighty new plants may be needed worldwide in the 1988-1994 time period.

Another Authoritative source of ammonia supply and demand projections is the British Sulphur Corporation, Ltd. In their projection, shown in in Exhibit D-3, a need for new world ammonia capacity builds even more quickly than in the World Bank projection (source: "Time for New Investment, "Nitrogen, No. 150, July-August 1984, p. 5).[22]

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EXHIBIT D-1

WORLD BANK
NITROGEN FERTILIZER SUPPLY/DEMAND BALANCE BY REGION
(Million Metric Tons of N)

REGION	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1992/93
Developed Market Economies	- 1.50	- 1.28	- 0.60	- 0.73	- 1.48	- 2.07	- 4.76
Developing Market Economies	- 1.98	- 1.77	- 1.33	- 1.16	- 1.31	- 1.14	- 5.64
Centrally Planned Economies	3.46	3.66	3.52	3.25	2.91	2.30	- 1.90
TOTAL WORLD	- 0.02	0.61	1.59	1.36	0.12	-0.91	-12.30

Source 1, Page 8.

Note: A minus indicates a current or projected ntirogen deficit. Nitrogen is the principal element in ammonia from a fertilizer perspective.

EXHIBIT D-2

WORLD BANK
NEW AMMONIA PLANTS CONSTRUCTED

5 YEAR SPANN	1960/64	1965/69	1970/74	1975/79	1980/84	1985/89
Developed Market Economies	19	63	41	41	28	7
Developing Market Economies	9	20	25	34	29	25
Centrally Planned Economies	21	32	40	46	30	3
TOTAL WORLD	49	115	106	121	87	35

Source 1, Page 12.

EXHIBIT D-3

BRITISH SULPHUR CORPORATION
FORECAST OF WORLD AMMONIA MARKET BALANCE
(million metric tons N)

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91
Total Production/ of which:	82.2	85.4	88.3	90.7	93.1	95.7	98.1	100.7
A	81.2	84.0	86.3	88.0	89.4	89.5	89.6	89.6
B	1.0	1.4	2.0	2.7	3.0	3.0	3.0	3.0
C	—	—	—	—	0.7	3.2	5.5	8.1

A Production from existing capacity at current utilization rates plus expected output from projects currently under construction or contracted out.

B Increased output through the reopening of idle plants and increased utilization of plants which have been operating of reduced rates. This would be justified only by higher market prices.

C Output required from new plants not yet contracted out. This would require the possibility of market prices reflecting the full cost of production out of a new plant.

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WRITTEN STATEMENT FOR THE RECORD
TO THE SENATE COMMITTEE ON FINANCE
ON S. 51
A BILL TO EXTEND AND AMEND THE SUPERFUND ACT

BY

THE AMERICAN PAPER INSTITUTE

AND

THE NATIONAL FOREST PRODUCTS ASSOCIATION

May 3, 1985

The American Paper Institute (API) and the National Forest Products Association (NFPA) have clear and specific interests in both the Superfund Act and the bill (S. 51) which has been reported out by the Senate Environment and Public Works Committee and is now before the Senate Finance Committee for the purpose of determining how to fund this legislation.

The over 170 member companies of API provide about 90 percent of all the pulp, paper and paperboard manufactured in the United States. In the course of these manufacturing processes these companies use hazardous substances taxed under Superfund and generate volumes of solid wastes subject to various requirements of RCRA. While the paper industry's major waste streams are non-hazardous, many mills generate minor amounts of hazardous wastes. Similarly, the 2,500 forest products companies represented by NFPA produce a large portion of the nation's solid wood products such as lumber and plywood. Timber products processing in that industry also generates substantial quantities of waste materials - of which some lesser amounts are hazardous.

API/NFPA believe that it is in the nation's interest that the Superfund Act be effectively implemented and adequately financed. We have carefully studied the various legislative proposals for a funding mechanism which have been offered by members of the Senate in recent months. We have also examined Mikel M. Rollyson's description of the Administration's proposal during his April 25, 1985 testimony before the Committee. Although we support the reauthorization of the

Superfund Act, API/NFPA have strong concerns about certain of these proposed approaches to funding Superfund. These concerns are detailed below.

The Scope of the Bill

The level of funding of the Superfund reauthorization depends largely on the scope of the legislation. During the first five years of Superfund the Environmental Protection Agency was widely criticized for failing to clean up - or even begin action on - enough of the National Priority List (NPL) sites. It is apparent that in the public's mind the key purpose of the Superfund is to clean up these abandoned hazardous waste sites around the country which may be contaminating groundwater and posing a potential threat to the health of those who live nearby. It is API/NFPA's position that in Superfund's second five years all efforts should be focused on this important job. EPA officials have testified that they can only efficiently utilize approximately $ 1.1 billion a year in the process of cleaning up NPL sites, and the Administration bill proposes a five year funding level of approximately $ 5.3 billion. API/NFPA concur with this and support limiting Superfund response to the cleanup of abandoned hazardous waste sites and restricting liability to cleanup costs, excluding natural resource damage. We believe that $ 5-6 billion over the next five years should be adequate to accomplish this.

Feedstock Tax

As part of the package of funding mechanisms for the new Superfund, API/NFPA support maintaining the present level of excise taxes on crude oil, imported petroleum products and the existing list of feedstock chemicals. Various estimates indicate that this feedstock tax, at current tax rates, would provide about $ 280 million annually.

Waste Tax

There are several proposals before the Committee which include as part of the Superfund funding package a tax on hazardous wastes - variously called a waste management tax, waste-end tax or waste generation tax. Based on the experiences of several state governments, API/NFPA have historically had reservations about the efficacy of this taxing approach. However, it appears that some form of waste tax may be included in the final funding package by the Congress. With this in mind, we would strongly urge the Committee that any tax on waste which they consider contain the following provisions:

* Tax Disposal Not Treatment - In the 1984 Amendments to the Resource Conservation and Recovery Act, the Congress enacted a strong presumption against the land disposal of hazardous

wastes and implied that consideration should be given to alternatives such as treatment. API/NFPA, therefore, strongly oppose proposals, such as the Administration's, which would tax the treatment of hazardous wastes. We particularly take issue with the proposal to tax wastewaters. Although the paper industry wastewaters are not hazardous under current EPA regulation, we are mindful that the 1984 RCRA Amendments require EPA to broaden the universe of hazardous wastes - possibly including paper industry wastewaters in the RCRA regulatory scheme. Accordingly, we have strong concerns about this taxing approach.

The paper industry generates over 7.2 billion tons of wastewaters each year. Consequently, even at the Administration's proposed $ .25 per ton tax rate, the tax on the paper industry would be $ 1.8 billion per year. Taxing the paper industry's wastewaters could by itself fund a $ 9 billion Superfund over five years!

* Exclude Wastes From CERCLA and RCRA Cleanup Actions - While most proposals for a waste management or waste-end tax would exempt from taxation at least some wastes from a CERCLA cleanup action, only the Administration's latest proposal would similarly exclude wastes from a RCRA corrective action.

API/NFPA strongly urge that hazardous substances disposed of in the course of carrying out any cleanup action at a

RCRA facility should be exempted from a waste management or waste-end tax.

Taxation of waste related to RCRA actions places an unfair burden on companies which are acting in a responsible manner to clean up wastes which were deposited on their plant sites in accordance with then existing regulations. Many of the companies which would be affected by such a tax have facilities that have been in existence for many years, some even for decades. In cases where large amounts of waste or contaminated soil are involved in the RCRA-imposed cleanup action, the tax would be huge. Thus, a "one-shot" waste-end tax would impose a heavy financial burden, especially on many small, environmentally responsible businesses.

When added to the extensive costs of a corrective action under RCRA, a large tax burden could force marginally profitable operators out of business. The cleanup of a bankrupted facility is very likely to become a public liability, i.e., a Superfund action.

Moreover, the imposition of a waste-end tax on material resulting from a RCRA cleanup or closure would not achieve one of the principal goals of the tax; discouragement of new hazardous waste generation. There simply is no rational linkage between this goal and the imposition of a tax on RCRA cleanup material. It is not new waste. Its generation cannot be avoided or minimized.

Furthermore, taxation of RCRA-generated waste is unfair, because it results in a sort of "double jeopardy" for responsible parties already paying to clean up RCRA sites. In addition to the substantial expense of RCRA waste removal, transportation, and disposal, waste-end tax measures would also require payment of tax on these same wastes upon ultimate disposal.

Accordingly, we urge that any waste-end tax provisions considered by the Committee specifically exclude from the tax such wastes which result from RCRA cleanup activities. As an example, this could be accomplished by adding the following new subsection "(5)" to § 4691(d), "Exclusion for Certain Wastes," created by § 102 of S. 14:

"(5) The disposal or long-term storage of any waste by any person in the course of carrying out any cleanup action under the Solid Waste Disposal Act including, but not limited to, corrective action, response action, or removal action."

* Option To Tax On A Dry Weight Basis - API/NFPA support the alternative tax computation proposed by Senators Moynihan and Bentsen in S. 14. This provision would allow an operator of a hazardous waste disposal facility who can establish the amount of water in the hazardous waste being taxed, to elect to pay a higher tax per ton on the amount of waste reduced by the weight of the water. This dry weight alternative calculation would properly place a tax on the

hazardous constituents and not on the weight of water.

* Tax Wastes Which Are Presently Hazardous - API/NFPA also strongly support the provision found in S. 14, in the bill proposed by Senator Bradley (S. 596), and in the Administration's proposal which would only tax those wastes which are identified or listed as "hazardous" under Section 3001 of the Solid Waste Disposal Act as of the date of enactment of this Reauthorization of the Superfund Act. Wastes which are declared to be hazardous by EPA at some future time would not be subject to the tax absent further Congressional action.

General Revenue Financing

API/NFPA support maintaining the present level of contributions from general revenues of 12.5 percent for funding the Superfund. We feel this is consistent with current budget proposals which call for a funding freeze in many programs. Inasmuch as Superfund cleanup provides a general societal benefit, we believe that general revenue financing is warranted.

Other Funding Mechanisms

The Senate Environment and Public Works Committee, in reporting out S. 51, recommended a funding level of $ 7.5 billion over five years. We recognize that a funding package composed of the present feedstock fee, contributions from general revenues at the 12.5 percent level, along with a waste management tax similar to that proposed by Senators Bentsen, Moynihan and Bradley would not generate $ 7.5 billion over five years. A variety of funding mechanisms have been proposed to achieve this $ 7.5 billion funding level. API/NFPA believe that in addressing these proposals the Committee should search for that approach which fairly spreads the burden most widely throughout the taxed community. API/NFPA would be pleased to work with members of the Committee and their staff in developing such an approach.

* * * * *

The American Paper Institute and the National Forest Products Association appreciate this opportunity to offer our views on this legislation to members of the Committee and we urge your consideration of the points we have raised.

STATEMENT
OF
THE
AMERICAN WOOD PRESERVERS INSTITUTE

FOR THE HEARING RECORD
OF APRIL 25, 26, 1985

COMMITTEE ON FINANCE
SENATE

CONCERNING
THE AMENDMENT OF THE INTERNAL
REVENUE CODE OF 1954 TO ESTABLISH
A TAX ON THE DISPOSAL OR LONG
TERM STORAGE OF HAZARDOUS WASTE

The American Wood Preserving Institute is pleased to have this opportunity to present its views on the reauthorization of the taxation provisions of the Internal Revenue Code of 1954 which relate to funding of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund). Our testimony deals with the potential negative impact of the waste end tax provisions of several of the reauthorization bills introduced to date on the wood preserving industry.

The wood preserving industry is small in terms of annual dollar sales, approximately $2.1 billion, and employees, approximately 13,300. The companies in the industry are primarily small businesses according to the Small Business Administration criteria, although there are exceptions to this general rule. It is an industry located in the primary timber producing areas of our country, the southeast and the northwest. Yet, despite its small size, the wood treating industry conveys enormous benefits to our society. Our nation's railroads run on treated wood ties, electric power and communications lines are supported by treated wood poles, and ships tie up to docks made of treated wood piling. In short, without these products our nation's commerce would be much more difficult to carry on.

That brings me to the purpose behind my testimony. This committee has before it several proposals for funding a reauthorized Comprehensive Environmental Response, Compensation and Liability Act. All of these proposals have within them provisions imposing a waste end tax on (1) the disposal or receipt of hazardous wastes in landfills, waste piles and surface impoundments and (2) long-term storage of hazardous wastes. As presently written all of these proposals would tax the disposal or long-term storage of hazardous wastes resulting from the clean up of releases under the Resource Conservation and Recovery Act (RCRA). In addition the Administration proposal, S.972, would tax wastes resulting from releases occurring after January 1, 1985, and cleaned up under Superfund. As I will explain, these taxes on the disposal or long-term storage of wastes resulting from RCRA and Superfund clean ups can potentially have a devastating effect on the wood preserving industry. I believe not only that Congress never intended this type of impact on the wood preserving industry (as well as on other industries), but also that taxation of these wastes is inconsistent with some of the underlying reasons for Superfund taxation.

Assuming that Congress enacts some form of waste end tax that covers hazardous wastes resulting from clean ups under RCRA or CERCLA, let us look at the potential impact of this decision on the wood treating industry. Under the Solid and Hazardous Waste Amendments of 1984 all hazardous waste treatment, storage and disposal facilities must apply for their Part B permits by November 8 of this year. Under section 3004(u) of the Amendments, corrective action is required for all releases of hazardous wastes or constituents from solid waste management

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units at facilities seeking a permit under Subtitle C. EPA also has interpreted section 3004(u) to cover post-closure permits as well as operating permits. What this will mean for most of the approximately 300 wood treaters who treat with creosote or pentachlororphenol, and also for some inorganic arsenical treaters, is that they will have to begin taking corrective action sometime after November 8 of this year, because these facilities are mostly decades-old facilities which have suffered until quite recently, when the RCRA regulatory program was put into place, from bad waste management practices. Ground water monitoring of these facilities is likely to show contamination. In turn these facilities will generate on a one-time basis enormous amounts of hazardous waste resulting from corrective action taken. This one time waste generation activity will be taxed.

Let me give you some examples of the magnitude of the tax on this one-time generation activity. Using the rate of $45/ton for the tax on the disposal or long-term storage of wastes, which is the rate taken for the Superfund taxation bill, S.14, proposed by Senators Moynihan and Bentsen, the tax on wastes resulting from clean up of sites that are one acre and five acres in size would be approximately $1.2 and $6.1 million, respectively. Using the rate of $150/ton for the tax, which is taken from the amendments to S.51 proposed by Senator Stafford, the tax on wastes resulting from clean up of sites that are one acre and five acres in size would be approximately $4.0 and $20.3 million, respectively.

The costs for clean up should be compared with the average, or typical, wood preserving facility in the industry. Such a facility sells about $3.3 million in product per year, employs 21 people, and makes on the average 6% profit per year. This profit equates to about $200,000 per year. When you compare this profit with the tax figures resulting from clean up that I just gave you, you can well imagine the fate of the typical wood treater faced with paying the waste end tax.

I have just covered the worst case scenario for the wood treating industry. It assumes that most creosote and penta treating facilities would have to take corrective action shortly after November 8. What if these facilities either do not initially find any releases when applying for Part B permits or chose not to apply for Part B permits, thus losing interim status, and chose instead to become large or small quantity generators, shipping their wastes off-site for disposal or storage. It is my belief, because of decades-long, bad, but acceptable at the time, waste management practices, that most wood treating facilities will eventually have to undertake clean ups under RCRA corrective action orders issued to interim status or finally-permitted facilities, RCRA closure or post-closure clean ups, or Superfund removal or remedial actions. In turn the magnitude of the tax on the wastes resulting from clean ups due to these actions would be equivalent to the sums I gave in my prior examples.

Is taxation of the wastes resulting from one-time clean ups under RCRA or Superfund of wood treating facilities fair? Should Congress permit the adverse impact on the wood treating industry that I anticipate will flow from a waste end tax on RCRA or Superfund clean ups? Does a tax on wastes resulting from RCRA or Superfund clean ups at wood treating facilities serve the purposes underlying Superfund taxation? For the following reasons I believe that the answer to all of these questions is no.

Taxation of the wood treating wastes resulting from one-time clean ups under RCRA or Superfund is unfair. Many wood treating facilities have been in operation for decades. Owners and operators of these facilities have tried to operate in good-faith in accordance with all known laws, environmental and other. When RCRA was enacted into law, and EPA promulgated implementing regulations, most wood treaters acted promptly to comply with these laws. Yet, despite all of these laws, hazardous wastes continued to be generated and handled on-site. Some wastes and waste handling activities were even exempted from regulation at the time. Now, under various waste end taxing schemes proposed by Congress, should there be a clean up activity resulting from past practices, all wastes resulting from such a clean up would be taxed. This one-shot tax is basically a tax on past activities, which were non-taxable at the time. It is a retroactive tax. Had wood treaters been given notice at the time that their waste generation and disposal activities were going to be taxable events they certainly would have altered their behavior, given the severe present consequences of the proposed waste end taxing schemes. To now tax wood treaters on past activity, and in light of the heavy and, perhaps, insurmountable financial burden that it will place on many marginal, but environmentally-responsible businesses, could almost be viewed as punitive.

Congress should not permit the adverse impact on the wood treating industry that will certainly follow if a waste end tax is placed on the dispoal and long-term storage of hazardous wastes resulting from RCRA and Superfund clean ups. This type of tax will draw money away from viable entities which have very limited resources with which to take corrective action. The cost of clean up alone at a facility could be enough to make the typical wood treating company insolvent. To impose a tax on the wastes resulting from a clean up imposes a double burden on a facility; first, the cost of clean up; second, the cost of the tax. This double burden is a burden that most wood treaters facing a RCRA or Superfund clean up cannot bear. Therefore, before imposing a tax on disposal or long-term storage of wastes resulting from RCRA or CERCLA clean ups, Congress should carefully consider whether it wants viable, environmentally-responsible entities undertaking long-term clean ups at wood preserving sites using their own money, or whether it wants the task conducted by EPA using Superfund money.

A tax on wastes resulting from RCRA or CERCLA clean ups at wood treating facilities does not serve many of the purposes for Superfund taxation. Granted, such a tax does provide a source of revenue, but it is not a stable or predictable source. It would be a one-time tax at most wood preserving facilities. Moreover, the tax holds the potential for narrowing the base from which future revenue is received because the tax's magnitude on a per plant basis could force many wood treaters out of business. Further, the tax does not discourage reduction in the quantities of hazardous waste generated because the waste generated from clean ups results from past management practices. Because of the burden imposed by the tax, the tax may even work to discourage wood treaters from taking corrective action.

Particularly troublesome is the fact that taxation of RCRA facility clean ups contradicts one of the primary rationales underlying creation of the Superfund, which is to tax those responsible for clean up activities under Superfund. Since the owners or operators of RCRA facilities would be responsible for conducting any needed clean up activities at their sites, Superfund money would not be needed to underwrite these activities. Therefore, it is unfair and illogical to tax a RCRA facility owner or operator already paying for clean up of his site when the fund supported by the tax will not be used for the clean up.

For the foregoing reasons, I urge you to act to prevent ill-founded and potentially devasting impacts on the wood treating industry resulting from waste end taxation. I urge you to exclude from any such tax wastes resulting from clean ups under RCRA and Superfund.

Thank you very much for your attention.

STATEMENT OF
CELANESE CORPORATION
BEFORE THE SENATE FINANCE COMMITTEE
SUPERFUND TAX LEGISLATION

Celanese Corporation appreciates the opportunity to comment on proposals to extend the Superfund program. Celanese recognizes the importance of reauthorizing Superfund and supports the Superfund clean-up effort, which benefits the entire nation. We have limited our comments to the funding provisions being considered by the Committee.

BROAD-BASED TAX

o A broad-based tax should be enacted to replace or supplement the current tax on chemical feedstocks. Exports should be exempt from the tax but the tax should be imposed on imports. The Bentsen-Wallop proposal (S.957) would achieve these results.

The Superfund program needs a stable long-term funding structure which will not have an unnecessarily adverse impact on the U.S. economy. In addition, the tax should be applied fairly to all those who have contributed to the waste site clean-up we face today.

Analysis of sites on the National Priority List indicates that virtually all industries, as well as a broad spectrum of society, have contributed wastes to the sites at which Superfund money will be spent. A study by CMA has shown that chemical industry companies were named as potentially responsible parties at Superfund sites only 13% of the time. Two thirds of all companies named were named only once. The 12 chemical companies that contributed 70% of the money to the present Superfund were named only 1% of the time.

One representative Superfund site provides a good example. At the Stringfellow site in California, EPA has identified 291 potentially responsible parties who may have contributed waste. Of particular interest, the 25 largest contributors have not been liable for any of the current feedstock taxes. Only about 15 percent of the total number of those companies identified are petroleum or chemical companies.

At Stringfellow, the potentially responsible parties include a broad cross section of U.S. industrial and agribusiness concerns--large and small. These companies make products consumed throughout the United States by all of society. For example, food, apparel, paper, fabricated metals, electronic and transportation equipment were some of the products manufacturers identified. In the non-manufacturing sector, such concerns as agricultural production of crops and livestock, motor freight, transportation by air, communications and business services were identified. Other contributors of waste at the Stringfellow site were the City of Los Angeles, the U.S. Air Force and the U.S. Navy.

The Bentsen-Wallop proposal (S.957) would properly extend the Superfund tax to all manufacturing industries. Because S.957 is structured as a tax on sales of manufactured goods and not on companies, the proposal can exempt exports from the tax and impose the tax on imports. It is thus "trade neutral." It ensures that exports can compete in foreign markets and that imports do not have an unfair advantage in domestic markets. We should not make the mistake of enacting any additional taxes in this country, including waste-end taxes, that do not have this advantage.

FEEDSTOCKS TAX

- The existing Superfund feedstock tax should not be increased. Increased feedstock taxes would seriously aggravate the deteriorating condition of the U.S. petrochemical industry. In this highly competitive worldwide industry, newly imposed costs cannot be passed through to the consumer in the export or U.S. market.

The current Superfund program is financed by a tax on basic chemicals, or feedstocks, which raises about $300 million annually. Worldwide market realities are such that this tax simply can not be raised. The petrochemical industry is suffering considerably from the effects of the last recession and is now in a vulnerable position because of the construction of plants in the Middle East and other areas rich in cheap supplies of oil and gas. The hard fact is that when we tax our domestic chemical industry, we encourage loss of jobs and production of chemicals outside the country, and we encourage industrial users of the chemicals to manufacture their products outside the country. That is unfair to the chemical industry and counter-productive for the U.S. economy.

The chemical industry in 1984 was the third largest manufacturing industry in the United States in terms of value of shipments. It also is one of the few sectors of the economy which has consistently exhibited a positive trade balance. That trade balance peaked in 1980 and has been declining since that time. Using the Department of Commerce's SIC classification 28, Chemicals and Allied Products, the chemical balance of trade has declined from $14 billion in 1980 to $10.3 billion in 1984, which represents a decline of 26 percent. There are segments of the industry, however, which have exhibited an even worse performance in declining trade balances.

During the 1980-84 period, the positive trade balance of the petrochemical industry as defined by the Department of Commerce declined from $8.6 billion to $5.5 billion. Not only is this a drop of nearly 37 percent, but the petrochemical share of the overall chemical trade balance has declined over the period from 62 percent to 53 percent. When the $3.2 billion loss in petrochemical trade is compared with the $3.7 billion loss in trade balance for all chemicals, it becomes obvious that petrochemicals are a segment of the industry which is under severe competitive pressure in the international arena. To impose a greater Superfund tax burden on this segment of the chemical industry would only exaggerate that pressure.

"WASTE-END" TAX

- The proposed waste-end taxes would fall on the same industries that are currently subject to the feedstock tax. Since these taxes cannot be passed through to the consumer, these taxes place U.S. chemical companies at a further competitive disadvantage in world markets. If, however, Congress decides to enact such a tax, it is essential that the Moynihan-Bentsen version (S.14) be adopted with the dry weight calculation option.

In recent weeks, there has been considerable controversy on whether to enact a waste-end or waste generation tax. Some have suggested that a waste-end tax would spread out the tax burden across industry. However, careful analysis of the 1984 Westat, Inc. hazardous waste survey indicates that either a waste-end or a waste generation tax would predominantly impact the same industries already responsible for paying the feedstock tax.

Other proponents of a waste-end tax have suggested that such a tax is necessary to provide an additional incentive to eliminate land disposal of wastes. Celanese believes that such an incentive may not be necessary. In November 1984, Congress enacted stringent new amendments to the Resource Conservation and Recovery Act (RCRA) which are designed to ban all land disposal of hazardous wastes unless such disposal is determined to be protective of health and the environment. An additional overlay of tax incentives on the same chemical and petrochemical companies that are already responsible for paying the existing feedstock taxes may be inappropriate and counter-productive on international trade. Waste-end taxes would be applied only to domestically produced chemicals, thereby penalizing exports and unfairly subsidizing imports.

If the Senate decides to adopt a waste-end tax, we believe the Moynihan-Bentsen proposal (S.14) represents the most equitable waste-end tax since it only taxes disposal and long-term storage of wastes. The proposal properly exempts treatment of wastes, including treatment of wastewater in biological waste treatment systems permitted under the Clean Water Act. S.14 also provides an alternate dry weight calculation which would prevent the tax from having a disproportionate impact on deep injection wells, which normally dispose of highly dilute wastes.

The Finance Committee should reject the Administration's proposed "waste-management" tax. Although the Administration announced significant modifications of its proposal on April 25, 1985, the proposal would still unfairly tax treatment of wastes. Particularly significant, the wet weight tax proposal would have a disproportionate impact on deep injection wells. Wastes injected into deep wells by Celanese average 98 percent water. Under the Administration's proposal, the total weight of the injected wastes, including water, would be taxed at $5.00 per ton which would be equivalent to a tax of $250 per ton on the non-water component.

Celanese is particularly concerned that the Administration' waste-end proposal is still designed to raise $600 million per year. The revenue uncertainties of the waste-end tax, as evidenced by the Administration's recent dramatic change in the tax rate of its proposals, dictate that Congress should not attempt to raise more than $300 million per year from this questionable revenue source. Under the Administration proposal, tax rates would dramatically increase if industry significantly reduces the volume of waste generated, as required by the 1984 RCRA amendments.

STATEMENT BY
EDISON ELECTRIC INSTITUTE
BEFORE THE
COMMITTEE ON FINANCE
UNITED STATES SENATE
MAY 3, 1985

Edison Electric Institute (EEI) appreciates the opportunity to present this statement concerning the tax provisions of the Hazardous Substance Response Trust Fund as provided for under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund).

EEI is the association of investor-owned electric utility companies whose members provide service to 96 percent of all customers served by the investor-owned segment of the industry. EEI member companies generate approximately 75 percent of all the electricity in the country and service 73 percent of all ultimate customers in the nation.

EEI supports the objective of hazardous substance cleanup as proposed in Superfund legislation. While we concur with the worthy objectives of such legislation, we cannot endorse a tax on the electric ratepayer to address the problem of hazardous waste cleanup which indiscriminately imposes culpability on all large corporations. Any taxation system which does not attempt to match tax liability with actual environmental liability is inequitable.

Several bills have been introduced to raise additional revenues to be used for an expanded cleanup effort. The legislative proposals range from increasing existing funding levels to several broad-based business taxes designed to raise a significant amount of revenue. This statement presents EEI concerns with respect to these various proposals.

Bills such as the Mitchell/Chafee bill (S.955) would greatly increase the existing tax on petroleum. This tax would increase the cost of electricity to our customers in certain areas of the country. Some electric utility companies, particularly those on the East, Gulf and West coasts, must use substantial quantities of oil to generate electricity. Under present law, oil used to generate electricity is subject to the same excise tax as oil used as a feedstock in petrochemical plants. This tax liability is imposed even though no problems related to hazardous substances result from such electric generation. The absence of problems related to hazardous substances is explained by the fact that utilities use high temperature, high efficiency boilers and the environmental activities related to generation of electricity is closely regulated under federal and state laws. For oil-burning utilities, an increase in the tax on petroleum will automatically increase fuel costs which in turn will cause higher electricity rates for customers. Unless oil used to generate electricity is exempted, we are opposed to any significant increase in the Superfund tax on petroleum. Such an increase would require electric utility customers to make additional contributions to cleanup efforts unrelated to their consumption of electricity.

Similarly we are concerned with those legislative proposals which would impose new broad-based income or excise taxes designed to raise significant amounts of revenue. For example, S. 596 introduced by Senator Bradley would require a 0.083% tax on taxable net receipts and impose an additional tax liability of approximately $40 million per year to our customers. Thus, the Bradley proposal represents a 20-fold increase in the tax burden to electric utility customers. Similarily, S.955 (0.3% tax on corporate earnings and profits over $5,000,000), and a proposed amendment by Senator Stafford to S. 51 (0.014% tax on taxable net receipts) would cause higher electricity rates for most utility customers regardless of fuel source.

In addition to an increase in electric rates, we also are concerned that each of these proposals, as well as the excise tax on manufactured goods in Senators Bentsen's and Wallop's bill (S. 957), would be difficult to administer both for the government and for taxpayers. For instance, both S. 596 and Senator Stafford's proposed amendment to S.51 would require every applicable corporation to determine its "cost of goods sold" which is subtracted from gross receipts to arrive at taxable net receipts, the base upon which the tax is computed. Unfortunately, no definition of "cost of goods sold" presently exists and defining such a term that would satisfactorily deal with the myriad of unique situations faced by different businesses would be virtually impossible.

A similar concern exists with the concept of "earnings and profits", the tax base used in S. 955. Although existing section 312 of the Internal Revenue Code contains provisions with respect to earnings and profits, neither the Code nor regulations contains a comprehensive definition of "earnings and profits". Under present law, the purpose of earnings and profits is limited to determinations of taxability of dividends and other shareholder distributions. If the purpose of earnings and profits is expanded by S. 955, not only will a comprehensive definition of the term be needed, but also considerable additional administrative expenses would be incurred in order to comply with the provision.

In conclusion, we believe that any Superfund taxation system should match tax liability with the amount and toxicity of hazardous substances that electric utilities dispose of at Superfund sites. In our opinion, the imposition of an additional tax on electric utility customers when the utility did not contribute to a Superfund problem is inequitable.

Thank you for the opportunity to present our views on this important legislation.

Fort Howard Paper Company
P O Box 19130, Green Bay, WI 54307-9130
1919 S. Broadway Phone 414-435-8821

Amendment to Superfund Bill to Seek Excise Tax Exemption on Transient Production of Chlorine

Background

Fort Howard Paper Company maintains and operates a chemical facility in connection with its paper manufacturing business conducted at both Green Bay, Wisconsin and Muskogee, Oklahoma. The chemical system produces sodium hydroxide (NaOH) and calcium hypochloride (CaHCL), which are used at various stages of the papermaking process.

The chemical processing facilities are a self-contained closed system. The basic chemical operation performed by this equipment is to process common salt (NaCl) and lime ($CaOH_3$), both of which are non-taxable chemicals within the meaning of I.R.C. Section 4661, into sodium hydroxide (NaOH) and calcium hypochloride (CaHCL). The only atomic by-product of this chemical process is hydrogen (H), which is vented during the chemical process.

$$NaCL + H_2O + CaOH_3 \xrightarrow{-e} NaOH + CaHCL + H_2O = H$$

Sodium hydroxide is a taxable chemical as defined by Section 4661 of the Internal Revenue Code of 1954 as amended. We have no interest in changing this section of the code.

Calcium hypochloride is not a taxable chemical as defined in IRC Section 4661. We wish to maintain that non-taxable status.

During this continuous process, the compound of salt and lime are reduced by chemical reaction and the element components of those substances combine to form sodium hydroxide and calcium hypochloride. The calcium processing system is not designed, equipped or supported in any manner so as to produce, isolate and collect chlorine in its separate atomic state and allow us to draw off chlorine for sale or other use outside of the system. Chlorine exists only in elemental state as a transient condition of the closed chemical processing system.

The system is so designed so as to produce, on a continual basis, sodium hydroxide and calcium hypochloride. It cannot be used to produce either one or the other, nor can it produce any other stand-alone chemical such as chlorine.

ALL ITEMS IN THIS LETTER ARE SUBJECT TO PROVISIONS SET FORTH ON THE REVERSE OF THIS PAGE

At issue is the IRS interpretation of the manufacture and use definition of a taxable chemical under current law. During the chemical reaction process, chlorine is produced in minute amounts, which is immediately cooled and injected with lime to produce calcium hypochloride. During the operation of this chemical process, no more than 30 pounds of chlorine are in existence within the closed system. Chlorine is not manufactured but exist on a transient basis through the process of chemical reaction. Once the chlorine gas is injected with lime, it becomes calcium hypochloride, a non-taxable chemical.

The exemption we are seeking to the excise tax provision of the current law would serve to prevent the IRS from taxing a transitory chemical that poses no risk to the environment.

Prior to construction of our chlor-alkali operations, we purchased chlorine as a separate item and stored it in railroad tank cars outside of our facility. We were concerned about the potential hazards posed by the large amounts of chlorine stored at our facility and thus chose to develop the chlor-alkali operations to eliminate that hazard. As I stated earlier, we have substantially reduced the risk to the environment by having no more than 30 pounds of chlorine present in the system as it is being converted from salt to calcium hypochloride.

As a closed system, there is no way that we could produce chlorine as a separate item that would then be subject to the tax. In addition, this system is designed in such a way so that any interruption in the chemical process would automatically shut down the entire system and eliminate any further production of sodium hydroxide or calcium hypochloride.

It is our belief that in the original Superfund law, Congress intended to assess an excise tax on those chemicals which were produced for sale or use and posed a threat to the environment. We do not feel, however, that they intended to tax chemicals that are produced as part of a chain reaction and which exist in only a transitory state as the chemicals act and react to form new chemical agents, nor do we feel that they intended to tax those transitory chemicals that pose absolutely no risk to the environment. Our closed system meets both of these tests.

1. The process minimizes the risk to the environment because of the relatively insignificant amount of chlorine that is present at any given moment.

2. The chlorine that is produced is only produced for a momentary period of time as it moves from common table salt to calcium hypochloride.

The relief we are seeking would be that the chlorine that is currently being assessed under the manufacture and use definition be exempted since it is a transitory chemical and does not pose any hazard to the environment. Were we able to produce, separate and store chlorine for use at a future date, then we would have no quarrel with the IRS interpretation.

However, we operate a closed continuous system that produces only two chemical end products. It is our contention that it is at this point that Congress intended the definition of manufacture and use to apply and our proposed amendment would serve to clarify that intent.

Proposed Amendment

To correct the problem created by the IRS interpretation of a taxable chemical, we would ask for the following similar language to be included in the Superfund bill now being considered by the Committee on Finance.

> "Section 5.04
>
> (d) EXPANSION OF EXCEPTION FOR SUBSTANCES IN A SELF-CONTAINED UNITARY CHEMICAL SYSTEM -- Subparagraph (A) shall not apply to any of the listed chemicals which are created as a part of a continuous process of chemical reactions within a self-contained unitary system and which are not the ultimate chemical product of this continuous chemical reaction.
>
> NOTE: subparagraph (a) is the tax rate schedule for each listed chemical.
>
> This exemption applies to all chemicals produced in this manner since January 1, 1981."

We feel that this amendment would serve to clarify the intent of the tax provisions in the Superfund law to address only those chemicals that are produced as an end product for sale and which can pose a threat to the environment.

sk3034r

HAZARDOUS WASTE TREATMENT COUNCIL

(202) 296-0778
TELEX: 89414

1919 PENNSYLVANIA AVENUE, N.W.
SUITE 300
WASHINGTON, D.C. 20006

May 1, 1985

Mary Frances Pearson
219 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Ms. Pearson:

Pursuant to the testimony we presented before the Committee on April 26, I am supplementing that presentation with information on several issues raised during the course of the hearing.

DEEP WELL INJECTION

* in addition to the deep well problems and sites discussed at the hearing, the State of California recently ordered the closing of a commercial deep well due to several explosions at the site from the injection of incompatible wastes. Moreover, this deep well was permitted in accordance with all current and applicable national standards for deep wells, which fail to address the issue of waste compatibility with the injection strata;

* under the current structure of the post-closure liability trust fund (PCLTF) deep welled wastes are not assessed the $2.13 per dry weight ton to cover liability subsequent to closure. It is the expectation of many deep well operators, however, that their facilities would be eligible for such liability transfer to the federal government 5 years after closure of the facility. Even if deep welled wastes were taxed for this purpose there is no way that the current level of taxation on a dry weight basis would even begin to cover the cost of cleanup;

* PCLTF considerations withstanding, unlike every other type of hazardous waste facility deep wells are not required to conduct groundwater monitoring or demonstrate financial responsibility for third party liability or corrective action. Due to the relatively small level of capital required to install and operate a deep well, and given the absence of any financial assurance requirements it is highly likely that problem deep well facilities will become the burden of "Superfund;"

* the largest hazardous waste fine in history, $10.0 million, was levied for the failure of a deep well at Vickery, Ohio, where a leak of over 45 million gallons of hazardous wastes from the injection zone went undetected for many years.

"DILUTE WASTES" & WASTEWATERS

* reference was made to the fact that certain wastes, particularly those that are deep welled, are very dilute materials and therefore should not be subject to waste-based taxes or taxed on a dry weight basis. The extent to which a waste is "dilute" is very much in the eyes of the beholder or generator as the case may be, and is specious distinction that begs the larger question of what types of constituents are present;

* most wastes are hazardous at low concentrations. In fact many common household pesticides are 99% inert ingredients, and medicinal iodine solutions are 98% non-toxic ingredients, yet all of these products are fatal or harmful if misused;

* in a similar vein, the term "wastwater" was used in a context which implies that merely because the material is a wastewater it is somehow innocuous. A survey of the 88 "F" and "K" series listed wastes reveals that 27 of them are indeed wastewater streams from various industrial processes. Neither the "dilute" or "wastewaters" labels in and of themselves provides any reassurance and first require a definition of the constituents in the wastes.

WET WEIGHT TON

* To fully appreciate the discount factor accorded to even very toxic waste streams under the dry weight ton scheme. A standard 5,000 gallon tanker truck that delivers a full load of highly corrosive hydrochloric acid (pH 1) to a facility for disposal at the rate of $5/wet weight ton would pay a tax of $125 (5,000 gal. x 10 lbs/gal ÷ 2,000 lbs/ton x $5 per ton). On a dry weight basis the tax would be approximately $0.50 if the rate were $5 per dry ton, and still only $5.00 for the entire tanker truck load if the tax rate were $50.00 per dry ton (calculation based on 100,000 grams of HCL per tanker, which equals 220 lbs. or .11 ton of dry HCL x $5.00 or $50.00 per dry ton.

If you have any questions on these or other issues related to CERCLA funding, please do not hesitate to contact me.

Sincerely,

Richard C Fortuna

Richard C. Fortuna
Executive Director

RCF/cec

STATEMENT FOR THE RECORD

by

HOWARD J. HOFFMAN

Submitted To The

COMMITTEE ON FINANCE

UNITED STATES SENATE

Concerning

SUPERFUND REAUTHORIZATION

May 1, 1985

WORKABILITY OF THE WASTE-END TAX

Howard J. Hoffman
1800 M St., N.W.
7th Floor
Washington, D.C. 20036
(202) 331-2768

I am a tax attorney in private practice in Washington, D. C. I have an interest in environmental excise taxes in general and the Superfund taxes in particular. The present testimony is submitted on my own behalf, and not on behalf of any client, my law firm, or any other organization.

This testimony will review some of the workability aspects of the current waste-end tax proposals, and will make suggestions to maximize workability. This testimony takes no position on whether the waste-end tax should or should not be adopted, nor on what the rates of tax should be.

The waste-end tax can be structured to be fairly well workable and administrable. Nevertheless, the tax, in any form, includes inherent complexities. The principle reason for these complexities is that the tax is built upon the RCRA 1/ regulatory system and is imposed on the hazardous waste industry, both of which are highly complex and rapidly changing. An additional level of complexity arises by virtue of the fact that in most cases, the individual States will administer and enforce the RCRA regulatory system.

The fact that the waste-end tax includes inherent complexitites brings workability and administrative concerns to the fore, and exerts pressure in a favor of structuring the tax as simply as possible. Even so, the complexity and rapid evolution of the hazardous waste industry suggests that attention should be paid to structuring the tax to avoid inequities and to avoid imposing unintended obstacles to improvements in hazardous waste management techniques.

The waste-end tax is most workable to the extent that it is tied to the RCRA regulatory system, *i.e.*, to the extent that the definitions and other determinations required under the waste-end tax are the same as those under RCRA. To the extent that the definitions and determinations under the waste-end tax differ from those under RCRA, complexity results to both (i) taxpayers, who would be required to make determinations solely for waste-end tax purposes, and (ii) the I.R.S., which in conducting audits would not be able to rely on information collected or determinations made by the E.P.A. or the State environmental agencies.

1/ References to "RCRA" herein are to the provisions of the Resource Conservation and Recovery Act governing hazardous waste, which amended the Solid Waste Disposal Act ("SWDA").

In general, the Administration's proposal appears to provide a more workable and administrable waste-end tax than the other legislative proposals, although complexities remain. The main reason for the relative simplicity of the Administration's proposal is that it would levy the tax on the receipt of any hazardous waste at any permitted or interim status hazardous waste management unit, and it would not provide any special rule for various types of treatment. Other proposals, which exempt from tax, or provide a credit for, waste treated in qualified treatment, generate substantial complexity due to the difficulty in defining qualified treatment. In addition, the Administration's proposal is more workable than others because it does not levy the tax on illegal waste management.

The following is a summary of some of the principle administrative and workability concerns raised by the current legislative proposals for a waste-end tax.

I. Definition Of Hazardous Waste.

A. Changes In The RCRA Definition Of Hazardous Waste.

Under the legislative proposals, the tax would be levied on "hazardous waste" as defined in RCRA regulations. In recent years, E.P.A. has made a large number of changes to these definitional provisions, and it appears that E.P.A. will continue to make revisions. Accordingly, an issue arises as to how to accommodate for waste-end tax purposes revisions that E.P.A. promulgates in the RCRA definition of hazardous waste.

Concern over subjecting unanticipated large amounts of hazardous waste to tax due to possible E.P.A. changes in the definition of hazardous waste has lead the Administration and most of the congressional sponsors to propose that the waste-end tax apply only to hazardous waste listed or identified on the date the tax is enacted. Of course, Congress could "update" the definition of hazardous waste through legislation that includes in the definition substances identified or listed by E.P.A. after the date the waste-end tax was enacted.

This "freezing" of the definition of hazardous waste may result in complexity. If E.P.A. changes the RCRA definition, and if Congress fails to "update" the tax definition, the RCRA and tax definitions will diverge. For example, if E.P.A. adds new substances to the lists of hazardous waste or new characteristics, but such additions are not given tax effect, the affected industry would be required to determine which substances are hazardous wastes under RCRA, and then determine which subset of these wastes are subject to tax. Some confusion may result.

Moreover, E.P.A. may make more technical changes in the definition of hazardous waste in ways other than listing new waste or adding new characteristics. For example, E.P.A. may revise the testing requirements for identifying hazardous waste. 2/ If changes such as these are made but not given tax effect, administrative problems may result. Industry would be required to employ the new tests in determining whether substances are hazardous waste for RCRA purposes. If these revisions are not given tax effect to the extent that they cause more substances to be identified as hazardous waste, industry may be required or permitted to employ the old tests to determine whether the substances are hazardous waste under such old tests because if not, the substances would not be subject to tax. Thus, industry may be required to apply two tests. If industry determines that under the old tests the substances would not be defined as hazardous waste (and thus would not be subject to tax), and if the I.R.S. has reason to dispute this determination, the I.R.S. may not be able to rely on information gathered by the E.P.A. or authorized States in administering RCRA because the E.P.A. or States may be administering the new tests.

Accordingly, even if it is determined that the waste-end tax should not apply to hazardous waste identified through new listings or the addition of new characteristics after the date the tax is enacted, consideration should be given to whether there are other technical changes in the definition of hazardous waste that E.P.A. may make, which should be given tax effect, such as changes in the applicable testing methods.

It should be noted that, as discussed below, giving tax effect to E.P.A. changes that add more substances to the definition of hazardous waste may create administrative problems to the extent that time delays occur between the effective date of the E.P.A. revisions and the date that authorized States adopt those changes.

Note that under the Administration's proposal, E.P.A. may in effect broaden the tax base -- without revising the definition of hazardous waste -- by requiring that additional

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2/ E.P.A. has proposed to revise and standardize testing requirements under RCRA Subtitle C. 49 F.R. 38786 (October 1, 1984). Similarly, E.P.A. could revise the definition of certain characteristics. E.P.A. has stated that it plans to propose revisions to the definition of the E.P. Toxicity requirement so that solid waste that includes certain additional substances may be considered hazardous waste. 50 F.R. 17824 (April 29, 1985).

hazardous wastes be managed at waste management units that are subject to the permit or interim status requirements.

E.P.A. revisions that have the effect of exempting substances from the definition of hazardous waste should be given automatic tax effect because otherwise, substances that are no longer considered hazardous waste may be subject to tax. 3/

B. Changes By States In The Definition Of Hazardous Waste.

Developing the proper definition of hazardous waste reaches another level of complexity because most of the States have been, or in the near future expect to be, granted authority to administer RCRA. These authorized States may make revisions for State purposes in the definition of hazardous waste. In general, States are permitted to tighten the definition of hazardous waste (*i.e.*, to revise the definition to include more substances as hazardous waste), but not to relax the definition. However, States may be permitted to grant certain variances from the definition of hazardous waste, including (i) delisting particular hazardous wastes generated by individual generators or managed by individual treatment, storage, or disposal facilities, and (ii) eliminating from the definition certain substances that are managed in certain ways, such as particular types of recycling. 4/

Of course, revisions made by authorized States that tighten the definition of hazardous waste should not be given effect for waste-end tax purposes. However, it should be recognized that such revisions may create complexity. For example, if a State adds new substances to the lists of hazardous wastes, confusion may result in determining which wastes are subject to Federal tax.

3/ Under the Administration's proposal, hazardous waste would, in general, be subject to tax only if managed at waste management units that are subject to permit or interim status requirements. Substances that E.P.A. exempts from the definition of hazardous waste may continue to be managed at such units for a variety of reasons, *e.g.*, authorized States may continue to require management at such units.

4/ See 40 C.F.R. 260.22; 40 C.F.R. 260.30; 50 F.R. 643, 654-55 (January 4, 1985); E.P.A. Program Implementation Guidance 82-4 (May 25, 1982).

Consideration should be given to giving tax effect to State-granted variances from the definition of hazardous waste. Because authorized States step into the shoes of the E.P.A. in administering RCRA, State-granted variances may be treated as if the E.P.A. granted the variance. If a State grants the variance, but the substance remains hazardous waste for tax purposes, administrative problems may arise because the regulatory base upon which the waste-end tax generally rests would be lacking. 5/

C. Changes By E.P.A. In The Definition Of Hazardous Waste -- Effects Of Time Delay In The Case Of Authorized States.

Another complexity concerning the definition of hazardous waste arises because authorized States that administer RCRA, although required to adopt many E.P.A. changes in the definition of hazardous waste, are permitted a time delay of at least 1 year, and up to 2-1/2 years, before adopting the changes. *See* 40 C.F.R. 271.128, 40 C.F.R. 271.9, 40 C.F.R. 271.21(e)(2)-(3).

It is recommended that changes made by E.P.A. to exclude substances from the definition of hazardous waste should be given immediate effect for tax purposes. Such changes reflect a determination at the Federal level that such substances are not hazardous waste. It should be recognized that if authorized States delay giving effect (or decline to give effect) to such changes, administrative burdens may result that are the same as if the authorized States tightened the definition of hazardous waste, as discussed above.

Consideration should be given to whether E.P.A. revisions that tighten the definition of hazardous waste should be (A) given immediate effect for tax purposes or (B) given effect at the time the authorized State adopts the revision. This issue arises if (i) certain E.P.A. changes are given tax effect, as discussed above, or (ii) Congress revises the definition of hazardous waste for tax purposes by adopting E.P.A. revisions, but Congress does so before States have adopted such revisions.

5/ In some cases, under the Administration's proposal, the issue of whether to give effect to State-granted variances may not be significant because some substances that have been granted such variances are not managed at waste management units subject to interim states or permit requirements, and thus would not be subject to tax.

Some administrative burdens may result under either method (A) or (B) above. To illustrate, assume that the E.P.A. tightens the definition by listing additional substances as hazardous waste or by adding new characteristics, and the Administration's proposal is adopted of, in general, subjecting to tax only hazardous waste that is received at waste management units that are subject to the interim status or permit requirements ("Permitted Units").

In many cases, the substances that the E.P.A. changes identify as hazardous waste would not be managed at Permitted Units -- because not required to be so managed -- until the authorized State adopts the E.P.A. changes. Under these circumstances, few administrative problems may arise from the time delay. 6/

In some cases, industry may manage substances that are not defined as hazardous waste at Permitted Units, because of uncertainty over the definition of hazardous waste, an abundance of caution, or other reasons. These substances may be added as hazardous waste by E.P.A. and the E.P.A. changes may be given tax effect even before a State adopts the E.P.A. changes. In these circumstances, the substances would be subject to tax, but the tax may not be supported by the RCRA regulatory structure. Certain administrative burdens may result. For example, industry would be required to keep track of which wastes were subject to tax even though not subject to State regulation under RCRA, and the State regulatory authorities may not collect information that could be of benefit to the I.R.S. in auditing. Moreover, the presence of the tax may discourage industry from managing the waste at a Permitted Unit until required to do so by the adoption of State requirements implementing the E.P.A. change.

Not giving E.P.A. changes tax effect until adopted by the States would resolve the above problems, but would place upon the I.R.S. the burden of keeping abreast of the extent to which each authorized State has adopted E.P.A. changes.

6/ Note that under these circumstances, the newly added hazardous wastes would become subject to tax at different times in the different States, depending on when the State adopts the E.P.A. change and when the waste begins to be managed at Permitted Units. This result may appear to add complexity, but in practice, few administrative burdens would arise.

II. Identification Of The Taxable Event.

The legislative proposals identify the taxable event in a variety of manners, ranging from limiting the taxable event to receipt of hazardous waste at a Permitted Unit, to including as taxable events virtually all methods of waste management. The principle issue includes whether hazardous waste that is illegally managed should be subject to tax.

The Administration's proposal to subject to tax, in general, only hazardous waste managed at a Permitted Unit appears to be the most workable and administrable of the proposals. Significant problems of administrability arise with respect to the proposals to subject to tax hazardous waste managed otherwise.

A. Taxation Of Illegal Waste Management.

1. Under several legislative proposals, including S. 886, S. 14, and S. 596, tax would be levied on the management of hazardous waste in non-Permitted Units, when the waste is clearly required to be managed at Permitted Units. The best example of such waste management is "midnight dumping", and the proposals appear specifically designed to subject midnight dumping to tax.

The taxation of illegal waste management such as midnight dumping would create substantial administrative difficulties. The conduct of audits of known instances of midnight dumping may prove cumbersome due to (i) the difficulty of collecting the requisite information about the waste, including the amount of waste; and (ii) the potential need for the I.R.S. to rely on efforts by E.P.A. or State authorities.

In addition, any I.R.S. efforts to conduct random or sample audits to detect midnight dumping may bring more persons -- such as generators -- into the tax system and prove burdensome for both the industry and the I.R.S. These difficulties indicate that as a practical matter, the tax on midnight dumping may rarely be enforced. 7/ Unenforced tax laws potentially increase disrespect for the tax system.

2. The legislative proposals may also result in bringing accidental disposal of hazardous waste into the tax

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7/ The amount of tax revenues gained from a tax on waste that is illegally managed may not exceed the enforcement costs.

system, which may result in additional complexity. Accidental disposal may occur through spills or leaks.

3. **The legislative proposals may result in further complexity by subjecting to tax waste management practices that are exempt from permit requirements if certain conditions are met, but that fail to meet these conditions.** For example, generators may store hazardous waste for specified periods of time, under certain conditions, without obtaining a permit or interim status. 40 C.F.R. 264.1(g)(3); 40 C.F.R. 265.1(c)(7). A generator that stores the hazardous waste for longer than the specified period of time, or that violates other conditions, is subject to the permit or interim status requirements. Under the legislative proposals, hazardous waste stored by generators who are in violation of the specified conditions and thus subject to the permit requirements may be subject to tax. Under these circumstances, administrative complexity may result because (i) the potential universe of taxpayers would be increased, and thus the I.R.S. may be obliged to audit representative samples of persons not otherwise known to be taxpayers, and (ii) actual audits may be cumbersome.

Failure to tax illegal waste management may give the appearance of giving sanction or even encouragement to such activity. However, subjecting illegal waste management to penalties under RCRA may suffice to obviate the need for any tax. The presence of a tax on legal waste management, but not illegal waste management, argues on favor of increasing E.P.A. and State resources to deter and detect illegal waste management. 8/

B. Administrative Problems Arising From Administration's Proposal.

Administration's proposal, in general, levies the tax on only hazardous waste received at a Permitted Unit. 9/ Although, as discussed above, this proposal generally presents the most administrable means of imposing the tax, several technical problems may arise.

8/ S. 886 would create a measure of additional complexity by subjecting to tax hazardous waste that is lawfully managed, but not at a Permitted Unit, such as certain wastes managed in recycling units.

9/ The Administration's proposal also subjects to tax ocean disposal waste and exported waste.

1. Taxation Of Waste That Is Not In The RCRA System.

Administrative problems may arise in the case of generators of hazardous waste who have the waste managed at a Permitted Unit, but are not required to do so. For example, small quantity generators, persons who generate recyclable materials, and persons who generate other types of hazardous waste may choose to have their waste managed at a Permitted Unit -- for reasons of, for example, convenience or an abundance of caution -- even though not required to do so. Such waste would be subject to tax under the Administration's proposal. Administrative problems may arise to the extent that the tax would not be supported by the RCRA regulatory system. In addition, the tax may discourage management of the waste in a Permitted Unit.

Consideration should be given to exempting from the tax waste that is received at a Permitted Unit, but that is not required to be managed at a Permitted Unit. It is acknowledged that this alternative would raise certain administrative concerns of its own. For example, taxpayers and the I.R.S. would be required to distinguish between taxable and tax-exempt hazardous waste received at a Permitted Unit.

2. Clarification Of The Definition Of A Qualified Hazardous Waste Management Unit.

Under the Administration's proposal (at least in the form submitted prior to S. 972), a "qualified hazardous waste management unit", at which hazardous waste is taxed when received (herein termed a "Permitted Unit"), is defined as, in relevant part, an area of land or a structure "which is subject to requirements to obtain interim status or a final permit . . . ." This definition may be construed to provide that a Permitted Unit includes a unit that is exempt from the permit or interim status requirements if it complies with certain conditions, and thus is subject to the permit or interim status requirements if it fails to meet those conditions. For example, under this definition, a storage facility that is not permitted because it is generally used by a generator to accumulate hazardous waste for a specified period of time and it generally meets certain conditions may become a "Permitted Unit" if it fails those conditions or accumulates waste for longer than the specified time. Under those circumstances, it would be "subject to the requirements to obtain interim status or a final permit." As discussed above, auditing or subjecting to tax hazardous waste received at such a unit would give rise to administrative burdens.

As a result, consideration should be given to clarifying the definition of a Permitted Unit to exclude units that are subject to permit or interim status requirements only if they fail to fulfill a specified condition.

3. Authorized State And E.P.A. Revisions.

Note that authorized States may revise the permit or interim status requirements to subject more units to these requirements. Moreover, E.P.A. may revise its regulations to subject more or less units to those requirements, and authorized States may be required to adopt some of these revisions, albeit after an allowed time delay. In these cases, some administrative concerns may arise that are roughly comparable to the administrative concerns that may arise if the authorized States or E.P.A. change the definition of hazardous waste, as discussed above.

IV. Methods Of Identifying The Taxable Event; Treatment Credit.

A. General Methods Of Identifying The Taxable Event.

The legislative proposals vary widely in the taxable events identified. For example, the Administration's proposal would levy the tax on all hazardous waste managed in Permitted Units, while S. 14 would levy the tax on hazardous waste that is disposed, and includes a back-up tax on long-term stored waste and waste managed through certain treatment.

In reviewing these proposals, it should be recalled that the waste-end tax is more workable to the extent that it is based on RCRA and requires as few determinations as possible outside of those made under RCRA.

1. Administration's Proposal.

The Administration's proposal is most workable because it is based solely on the place of hazardous waste management, and hazardous waste management units and facilities are identified and defined under RCRA regulations.

The Administration's proposal has been criticized for levying unduly burdensome taxes on wastewater that is treated at a Clean Water Act facility or disposed by deep well injection. The most workable way of alleviating any undue burdens, while retaining the basic structure and thus the workability of the Administration's proposal, is the approach the Administration took in making the revisions that are incorporated in S. 972, which is to adjust the tax rates in the case of wastewater treated at a Clean Water Act facility or disposed by deep well injection. In addition, adjustments may be made to the credit mechanism for avoiding double tax to assure that the total tax paid on wastewater that is managed in some method prior to being managed in a Clean Water Act facility or a deep well does not exceed the amount of tax that would be levied if the wastewater were managed only at a Clean Water Act facility or a deep well.

An inherent complexity in the Administration's proposal is the fact that it brings into the tax system all hazardous waste managed at Permitted Units, with credits allowed to avoid taxing the same amount of hazardous waste more than once. This credit mechanism is discussed below.

2. Other Congressional Proposals.

The approach in S. 14 appears to create more administrability concerns than the Administration's proposal because it requires more determinations outside of RCRA. For example, the tax on hazardous waste stored for one year or longer would require a method of accounting for fungible waste.

The most troublesome aspect of S. 14, and comparable proposals, lies in their efforts to exempt from tax, or provide a credit for, certain hazardous waste that is treated. Time and space constraints preclude a detailed discussion of the workability of the various proposals.

A treatment credit patterned in part after that included in S. 886 appears to maximize workability by tying the credit most closely to RCRA. The discussion of the method illuminates the difficulties confronted in fashioning a treatment exception.

3. Structuring A Treatment Credit To Maximize Workability.

This testimony takes no position on whether a treatment credit should be provided, and stresses that any form of a treatment credit would reduce workability. The following is a discussion of a method of structuring a treatment credit -- patterned after the approach in S. 886 -- that attempts to maximize workability.

a. Method.

Perhaps the simplest method for a treatment credit would be to allow a flat rate credit or refund for each ton of tax-paid hazardous waste that is converted into nonhazardous waste by any method, including neutralization, destruction, or recycling. In general, no standards for the method of treatment would be imposed.

This approach is patterned in part after S. 886, which allows a credit for the full amount of tax paid for each ton of hazardous waste "subjected to qualified treatment or conversion", which is defined as "any method, technique, or process, which [within one year] changes taxable hazardous waste into a substance which is no longer a taxable hazardous waste", if certain conditions are met. S. 886, proposed I.R.C. §§4693(b)(1), 4695(9).

b. Extent Tied In To RCRA.

The treatment credit, under the above approach, would be fairly closely tied to RCRA in the case of treatment other than recycling. Treatment other than recycling generally must occur at treatment, storage, or disposal facilities that are required to maintain an "operating record" (or operating log). The operating log must include a description of the hazardous waste received and the methods of its treatment, storage or disposal. 40 CFR 264.73(b)(1); 40 CFR 265.73(b)(1). Thus, the operating record may include the information necessary to determine the credit.

The treatment credit would be less closely tied to RCRA in the case of recycling. In general, units that recycle hazardous waste appear to be subject to only limited aspects of RCRA regulation, see 40 CFR 261.6(c)(2), and certain recyclable materials are not currently subject to regulation when recycled, see 40 CFR 261.6(b)(3). As a result, in many cases, owners or operators of recycling units or processes are not required to maintain an operating log. As a result, the credit mechanism may be required to operate in part outside of RCRA, *e.g.*, recordkeeping would be required that is not required under RCRA. However, such recordkeeping may be necessary for business reasons. 10/

10/ Note that under the Administration's proposal, in some instances recycled hazardous waste that is subject to limited (or no) RCRA regulation will not be subject to tax because not managed in a Permitted Unit, and thus may not be allowed a credit.

c. Standards For Treatment.

Perhaps the most troublesome aspect of a treatment credit is the effect on the credit of the treatment processes. In general, the current legislative proposals, in one form or another, focus on the treatment process in determining the availability of the credit. These provisions raise substantial administrative concerns because they require taxpayers and the I.R.S., in determining the availability of the credit, to make difficult determinations under RCRA, or even to make determinations that are outside of RCRA.

For example, S. 14 exempts from tax hazardous waste treated in a treatment process that is "designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to convert such a waste to a nonhazardous waste" (Proposed I.R.C. §4692(a)(8)). It may be difficult to determine whether treatment processes are so designed, particular in the case of complex, multistep treatment processes, such as the placement of hazardous waste first in settling or evaporation impoundments, followed by the transfer of the waste to other treatment facilities. S. 886 denies the treatment credit in the case of treatment that "violates any requirement (other than a procedural requirement) of Federal or State law relating to the management of taxable hazardous waste. . . ." (Proposed I.R.C. §4693(b)(4)). This provision may add complexity by requiring the I.R.S. to inquire into, and resolve controversies concerning, whether the treatment process is in compliance with all of the numerous Federal or State requirements, as discussed below.

In general, the above proposal attempts to minimize this difficulty by allowing the credit as long as hazardous waste is converted to nonhazardous waste, without inquiring into whether the treatment process is designed to so convert the hazardous waste or whether the treatment process adheres to RCRA requirements. Failure to adhere to RCRA requirements may be subject to RCRA penalties.

More specifically, owners and operators of treatment units or processes may violate RCRA standards by failing to comply with RCRA requirements concerning method of operation. There are many such requirements, ranging from failure to maintain operating equipment in accordance with certain specifications to improper waste analysis or record-keeping and improper monitoring of groundwater. Arguably, violation of these requirements should not affect the computation of the credit because the credit should be determined with reference solely to the amount of hazardous waste converted into nonhazardous waste. Violations of these requirements may, however, give rise to RCRA penalties.

A more difficult problem would arise if owners and operators of treatment units or processes fail to comply with performance standards concerning the conversion of hazardous waste into nonhazardous waste. For example, (i) an incinerator may destroy hazardous waste with an efficiency of less than the required 99.99 percent, 40 CFR 264.343(a)(1); (ii) a treatment process that is claimed to neutralize hazardous waste may, in fact. fail to do so, and (iii) hazardous waste that is claimed to be recycled through use or reuse as a commercial product may be used in a manner constituting disposal, see generally CFR 266 Subpart C. The issue of the extent to which the treatment credit or exemption should be allowed in the case of failure to comply with such performance standards appears to arise regardless of how the treatment credit or exemption is structured.

Arguably, failure to comply with treatment performance standards has the same effect as illegal waste management. As discussed above, the most workable method of dealing with illegal waste management is to stay the hand of the tax, and instead to rely on RCRA penalties. By the same token, at least in certain cases involving destruction of waste, the most workable way of dealing with failure to comply with treatment performance standards may be to allow the credit, and to rely on RCRA penalties.

For example, if an incinerator is discovered to be destroying hazardous waste with an efficiency of only 90 percent, the claimed credit could nevertheless be allowed, and the incinerator could be subject to RCRA penalties. Attempts to deny the credit, or to require recapture, may be confounded by the difficulties in determining (i) how much hazardous waste (ii) over what period of time (iii) has been destroyed with what efficiency.

Admittedly, allowing a credit when hazardous waste has not in fact been destroyed as required is troublesome. In particular, there may be instances in which the treatment process constitutes an abuse that is designed to take advantage of the credit. Under these circumstances, it may be appropriate to deny the credit. These circumstances are difficult to define. Although not a wholly satisfactory solution, it may be necessary to allow the I.R.S. discretion to define those abusive circumstances through regulations or rulings.

On the other hand, it may not be appropriate to allow the credit if a treatment facility claims the credit with respect to hazardous waste that the facility claims has been converted into nonhazardous waste through a neutralization process (or through recycling), but that in fact has remained hazardous waste. Rather, it may be necessary to determine the amount of waste that has remained hazardous -- notwithstanding the administrative difficulties in doing so -- and deny the appropriate amount of credit or require recapture.

d. Time Period For Conversion Process.

Imposition of a time limit on the conversion process, e.g., allowing the credit only for conversion that occurs within one year of the time tax is first paid, would create complexity. A time limit would require tracing the management history of hazardous waste. Although the records of management history may exist due to RCRA requirements and business reasons, consolidating and reviewing them for tax purposes may create administrative burdens. A time limit would also require accounting conventions in the case of fungible hazardous waste, and would require determining whether hazardous residues of treatment processes that are subsequently neutralized should be considered as coming into existence (i) on the date that hazardous waste from which the residues arose came into existence or (ii) on the date the residues came into existence.

Although simplification concerns argue in favor of no time limit, consideration should be given to whether a statute of limitations (e.g., between three or five years) should be imposed in light of the difficulty of determining whether waste is tax-paid when many years have elapsed since the tax was paid.

e. Amount Of Credit.

If the tax rates vary according to management method, as the Administration has proposed, any treatment credit would appear to be most administrable if it is a flat rate credit that is less than or equal to the lowest tax rate. In this case, to determine the amount of the credit, it would be necessary to determine only that the hazardous waste was tax paid. If the amount of the credit is the full amount of tax paid, it would be necessary to trace the management history of the waste to determine the amount of tax paid.

f. Other administrability aspects.

Consideration should be given to other aspects of the treatment credit that may give rise to administrability concerns, including:

(1) The manner in which the treatment credit should be coordinated with the credit allowed to avoid double tax.

(2) How to determine the time when the credit becomes available (e.g., the time at which hazardous waste is converted to nonhazardous waste).

(3) When a treatment process involves the addition of nonhazardous substances that are not taxed, and results in nonhazardous waste and hazardous residues, how to allocate the amount of the nonhazardous substances between the neutralized waste and the hazardous residues for purposes of, among other things, assuring that no treatment credit is allowed for the non-hazardous substances.

(4) Accounting for fungible hazardous waste that was taxed in the hands of different persons (perhaps at different tax rates) and then collected at a single treatment facility for conversion into nonhazardous waste.

g. Exemptions.

Consideration should be given to whether processes that have some characteristics of disposal but that result in neutralization of hazardous waste should be eligible for the treatment credit. Examples include (i) land treatment and (ii) ocean disposal of certain wastes.

V. Credit To Avoid Double Tax.

The legislative proposals sensibly include a provision for a credit to avoid double taxation when hazardous waste is managed more than one time. The proposals for a credit generally are patterned after the Administration's proposal.

The Administration's proposal appears to work well in many cases. Nevertheless, the tax-and-credit mechanism should be recognized as an inherent complexity of the waste-end tax. Determining the amount and availability of the credit requires tracing the management history of hazardous waste to at least some extent, and although records of waste management should be available, compiling and reviewing them may constitute a paperwork burden. The actions required for taxpayers to claim, and the I.R.S. to allow, the credit may also constitute a paperwork burden.

In addition, several issues arise. The first concerns whether the credit should be available for the amount of non-previously taxed substances that became associated with hazardous waste and, as a result, subject to subsequent taxation. To illustrate, assume the following, under the Administration's proposal:

Day 1 -- 10 tons of hazardous waste are generated and placed in (nontaxable) short-term storage.

Day 2 -- The 10 tons are placed in treatment at a permitted unit. $60 in tax is paid.

Day 3 -- As part of the treatment, 2 tons of non-hazardous substance are added to the waste. At the conclusion of the treatment, 9 tons of hazardous waste have been neutralized, and 3 tons of hazardous residue remain.

Day 4 -- The 3 tons of hazardous residue are placed in a permitted disposal unit. A tax of $18 is paid.

Determining the amount of credit that is available on Day 4 is difficult. It is likely that a portion of the hazardous residue consists of the nonhazardous, nontaxed substances that were added during treatment. Allowing a credit for all 3 tons -- $18 -- would allow a credit for substances that were not subject to tax. On the other hand, failure to allow a credit may raise a difficult administrative problem in determining the amount of non-previously taxed substances in the residue.

The complexity of the hazardous waste management industry leads to numerous variations of this problem. For example, treatment processes may include passing waste over filters, and result in spent filters that are considered hazardous waste and that must be disposed. Because the filters were not previously subject to tax, an issue arises as to whether a credit should be available for the weight of the filters.

Second, an issue arises in the case of complex waste management that involves different tax rates. For example, under the Administration's proposal, assume the following management history:

Day 1. One ton of hazardous waste is generated. The generator immediately places the waste in taxable land storage, and pays a tax of $35.

Day 100. The one ton of waste is transferred off-site to a treatment, storage and disposal facility ("TSD Facility") for land disposal. At first, however, the TSD Facility places the waste in non-land storage. The TSD Facility pays tax of $6. A credit of $6 is allowed to the generator.

Day 200. The one ton of waste is placed in a land disposal unit. The TSD Facility pays tax of $35.

Under the Administration's proposal and other bills, issues arise as to the amount and availability of the credit. Should the TSD Facility be given a $6 credit (for the amount of tax it paid upon storing the waste) and the generator be given an additional $29 credit (so that the total amount of credit the generator would receive would be $35)?

Failure to allow the generator $29 in credit would mean that a total tax of $64 ($35 plus $6 minus $6 plus $35 minus $6) would be paid with respect to the waste. This amount of tax may be regarded as excessive. As a result, it may be advisable to allow credits in sufficient amounts to avoid all double taxation, i.e., to allow the $29 credit to the generator. It should be recognized that this result may give rise to an administrative burden because it may be necessary to trace the entire management history of the waste and to provide refunds in more than one installment.

Third, an issue arises over who should be entitled to the credit. The legislative proposals would allow the credit to the person who paid the tax with respect to which the credit is claimed. However, consideration should be given to allowing the credit to the person who pays the subsequent tax that triggers the availability of the credit. The latter person may be able to verify more readily the two pieces of information needed to substantiate the claim for credit, which are that (i) tax was previously paid with respect to the hazardous waste [11] and (ii) tax was subsequently paid. It should be noted that this issue does not arise for the great bulk of waste, which is managed by the generator.

VI. Other Issues.

A. Wet Weight v. Dry Weight.

The workability of the waste-end tax if the amount of tax is measured by "dry weight" has received a fair amount of attention to date. Perhaps the most extensive discussion may be found in EPA's "G" Study, pages 5-73 to 5-74. [12]

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[11] Substantiation of payment of this tax could be provided by a certificate stating that the tax was paid, upon which certificate the person claiming the credit could place reasonable reliance.

[12] Office of Solid Waste and Emergency Response, U.S.E.P.A., "The Feasibility And Desirability Of Alternative Tax Systems For Superfund -- CERCLA Section 301(a)(1)(G) Study" (December 1984).

EPA's "G" study suggests that dry weight would raise significant administrative concerns. In large measure, these administrative concerns would remain even if reporting on a wet weight basis is required but taxpayers are allowed to elect to report on a dry weight basis. The reason is that (i) taxpayers may consider themselves obliged to compute their tax liability under both a wet weight and a dry weight approach to determine which results in the lowest tax liability, and (ii) the I.R.S. would still be required to develop definitions for dry weight, and to audit taxpayers to assure that the conversion from wet weight to dry weight comported with the guidelines.

However, such an election system would avoid the harsh impact on smaller quantity generators that would result if reporting on a dry weight basis were required and if it were not feasible for such generators to compute dry weight.

B. Addition Of Nonhazardous Substances To Hazardous Waste.

There are numerous circumstances under which nonhazardous substances may be added to hazardous waste as part of the waste management process. Such nonhazardous substances may then become hazardous waste, for example, by virtue of being mixed with hazardous waste. See 40 CFR 261.3(a)(2)(iii)-(iv). For example, (i) hazardous waste may be treated by adding neutralizing agents or by filtering the waste through clay filters, or (ii) liquid hazardous waste may be solidified by the addition of stablizing materials such as concrete-like material, for purposes of disposal.

Under the waste-end tax proposals, the added nonhazardous substances would be considered hazardous waste and subject to tax. Criticism may result that the tax would discourage important waste management methods that entail the addition of nonhazardous substances. 13/

As a result, consideration should be given to exempting from tax the weight of nonhazardous substances that are added for waste management purposes, at least in the case of the most significant of these areas, such as the addition of solidification materials for disposal purposes. It must be acknowledged that the complexity of the waste management industry and the difficulty of justifying exemptions for certain additions of nonhazardous substances but not others may render the drafting of such an exemption difficult.

13/ By the same token, the tax may cause changes in waste management techniques solely for tax purposes, such as adding nonhazardous substances to hazardous waste after the waste has been received at a permitted unit (e.g., during the treatment or disposal process), instead of before such receipt.

STATEMENT OF INLAND STEEL COMPANY

Inland Steel Company ("Inland") is an integrated steel company with its manufacturing facilities located in East Chicago, Indiana. Inland welcomes this chance to comment on the proposed reauthorization of Superfund and thanks the Chairman and the other members of the committee for this opportunity.

SUMMARY

Inland strongly supports Superfund reauthorization legislation designed to clean up hazardous waste sites with the consequent elimination of threats to human health and the environment. It recognizes the need for funding to the five-year, $5.3 billion level recommended by the Administration.

In order to finance Superfund, Inland favors retention of the current feedstock tax in conjunction with general revenues and/or a broad-based tax. If a waste-end tax is adopted -- which Inland opposes -- deep well underground injection should be exempted or taxed at a nominal rate because it is an environmentally sound method of waste disposal.

I. INLAND FAVORS RETENTION OF THE CURRENT FEEDSTOCK TAX IN CONJUNCTION WITH GENERAL REVENUES OR A BROAD-BASED TAX TO FINANCE SUPERFUND.

Inland firmly believes that the Administration's $5.3 billion proposal will provide sufficient revenue to finance a rational, manageable program to clean up the nation's hazardous waste sites. In order to raise this revenue, Inland favors retention of the current feedstock tax in conjunction with general revenues and/or a broad-based tax.

Inland believes that the funds needed in excess of those raised from the current feedstock tax should not come from searching out additional types of specific industrial activity which can be taxed (such as waste-end taxes) to provide revenue. Instead, because hazardous waste sites are a societal problem, general revenues and broad-based taxes affecting all elements of society should provide the supplemental revenues.

Additional revenue for Superfund should be raised by taxes designed to reach the broadest possible set of taxpayers. Hazardous waste sites have been created by products that all segments of society have used and, therefore, represent a problem that society as a whole must resolve. The use of general revenues and/or the adoption of a new broad-based tax will distribute the burden equitably and provide a steady, reliable revenue source.

Inland also contends that waste-end taxes should be reserved for use by state governments. The current Superfund law requires 10 percent of private party cleanup costs to be provided by the states, amounts which many states are experiencing difficulty in raising. If the Administration's proposal of a 20 percent state share becomes law, states will become even more hard-pressed to raise their share of private party cleanups.

II. INLAND'S DEEP WELL UNDERGROUND INJECTION OF SPENT PICKLE LIQUOR AND RINSEWATER FROM PICKLING OPERATIONS IS AN ENVIRONMENTALLY SOUND METHOD OF WASTE DISPOSAL AND SHOULD BE EXEMPT FROM ANY WASTE-END TAX.

In steel forming and finishing operations, exposure to the atmosphere causes the formation of oxide scale on unfinished steel. This scale is removed by immersion in a "pickling" solution of hot hydrochloric acid. After the steel is pickled, Inland rinses the steel in a water conservation cascade rinsing system. Based on environmental safety concerns, Inland injects both the spent pickling solution ("pickle liquor") and the rinsewater into two on-site Class I deep injection wells. The waste material is injected far below any actual or potential underground sources of drinking water into a formation whose geological characteristics ensure that the material will remain isolated in this region.

A number of funding options proposed to reauthorize Superfund include a waste-end tax that would tax the underground injection of hazardous waste at prohibitively high rates. Any environmental tax adopted by Congress should not discourage environmentally sound methods of waste disposal. Inland's deep well underground injection of spent pickle liquor and rinsewater in accordance with regulations promulgated under the Safe Drinking Water Act is an environmentally sound disposal technology which should be exempt from any Superfund tax or be taxed at a nominal rate that will not discourage underground injection.

A. EPA's Underground Injection Control Regulations Ensure the Safety of Deep Well Underground Injection.

Under the authority of the Safe Drinking Water Act, 42 U.S.C. §§ 300f - 300j-10 (1982), the United States Environmental Protection Agency ("EPA") has promulgated an extensive regulatory program controlling underground injection. EPA separates underground wells into five classes. Inland's injection wells are in Class I, which includes those wells used to inject hazardous waste remote from or beneath formations containing an underground source of drinking water ("USDW"). Approximately 185 other hazardous waste deep injection wells are presently active. All Class I wells, including Inland's, are required to meet extensive design and operating requirements to ensure their integrity and to prevent leakage of contaminants into USDWs. Moreover, EPA requires all owners and operators of underground injection facilities to obtain operating permits. *See* 49 Fed. Reg. 20,138 (May 11, 1984).

The key premise underlying EPA's underground injection control ("UIC") program is that waste can be deep well injected only in locations where underground formations have the capacity to confine and isolate hazardous waste. Inland submitted a UIC permit application on December 27, 1984 and operates its two wells in full compliance with UIC program requirements, some of which are described in more detail below.

1. Geology.

Under the UIC regulations, waste can be injected only at locations where underground formations have the capacity to confine and isolate the waste materials below all USDWs. Inland injects into Mt. Simon sandstone, which is confined above by thick sequences of shale and limestone and below by Pre-cambrian granite. The Great Lakes region has a history of minimal seismic activity, making the chance of earthquakes remote. No vertical fractures or faults in the vicinity of the facility exist that could cause vertical migration of waste material.

2. Hydrology.

As noted above, all Class I injection wells must inject below any potential USDW. Inland injects spent pickle liquor and rinsewater over 4300 feet below the surface of the earth, far beneath the nearest USDW. The water in the Mt. Simon formation is extremely saline and brackish, not suitable for drinking water purposes.

3. Injection Zone Characteristics.

The injection zone must be able to "absorb" the waste material. The porosity and permeability of Mt. Simon sandstone make it ideal for underground injection. No recoverable mineral resources exist in this stratum.

4. Design Requirements.

Deep wells, including Inland's, must be designed to provide multiple layers of protection from leaks that could contaminate USDWs. The injection tubing through which Inland's waste is injected is surrounded by layers of cement, steel and fiberglass casings.

5. Monitoring.

The pressure in the injection tubing and in the annulus, the space between the injection tubing and the first casing layer which is filled with a non-corrosive liquid, is constantly monitored and recorded. Leaks in the injection tubing or protective casing are identified immediately so that well shutdown and repairs can be accomplished promptly.

6. Pressure.

Waste must be injected at levels that will not cause fractures in the receiving formation. Inland's injection pressure is well within the boundaries established for the area by EPA.

7. Injection Zone Artificial Penetration.

The UIC regulations require operators of deep wells to survey the surrounding area to discover the location of any unplugged gas or water wells. If such wells extend into the injection zone, they can provide a pathway for the vertical migration of waste. No abandoned wells that extend into the injection zone exist for a radius of two miles from the Inland wells.

8. Mechanical Integrity Testing.

EPA requires operators of underground injection wells to demonstrate that their wells do not leak and that there is no significant fluid movement into a USDW through vertical channels adjacent to the injection well bore, the most likely pathway of contamination. Mechanical integrity was demonstrated for one of Inland's wells in 1984 and will be performed for the other well by mid-December 1985.

* * *

Numerous regulatory requirements, only some of which are outlined above, ensure that Inland's wells, and all other Class I wells, will not leak hazardous waste into a USDW. Given that this program provides protection to public health and the environment by preventing the contamination of USDWs, Congress should not preempt the stringent UIC regulatory program by imposing a tax that will discourage this environmentally sound disposal technology.

B. The History of Deep Well Injection Demonstrates the Environmental Safety of This Method of Waste Disposal.

Before imposing a waste-end tax, or any other environmental tax, Congress should consider its environmental consequences. A waste-end tax should be designed to discourage land disposal and other environmentally harmful methods of hazardous waste disposal. It should be assessed against those types of disposal that led to the problems the country now faces at Superfund sites. Since history demonstrates that deep well injection is safe, and because deep wells have not created the problems Superfund is designed to address, underground injection should be exempt from any waste-end tax.

Superfund has been established as a mechanism to clean up leaching hazardous waste sites that are releasing or threaten to release contaminants into groundwater.

History shows that deep wells do not threaten groundwater and are not part of this problem, which has been caused by leaching landfills and surface impoundments. In fact, a soon-to-be-released EPA study will show that contamination at only one of the over 800 proposed and final sites on the National Priorities List may have been caused by a deep well. At the relatively infinitesimal number of deep wells that have had problems, compliance with the existing UIC design and operating and monitoring requirements would have eliminated any possibility of a danger to USDWs. Accordingly, deep injection wells, which are not part of the nation's hazardous waste site cleanup problem, should not be taxed. Otherwise, Congress would be establishing a disincentive for companies to continue using what has proven to be a sound waste disposal technology, thereby defeating what should be one of the goals of a waste-end tax -- the encouragement of safe disposal of hazardous waste.

C. Any Waste-End Tax on Underground Injection Must Take Into Account the Toxicity of the Waste.

Inland injects a combination of spent pickle liquor and rinsewater into its two deep wells. Of the total material injected, 94 to 97 percent is water, leaving only three to six percent solids.

One option that would somewhat alleviate the inequity of proposed waste-end taxes on underground injection would be to calculate the tax on the basis of dry weight. The determination of dry weight of spent pickle liquor and rinsewater is a basic, affordable laboratory procedure. The necessary testing can be performed in accordance with one of the following standard protocols:

(1) ASTM Method D-1888 Method A;

(2) EPA Method 00500;

(3) Standard Method 209A;

(4) addition of the results of EPA Methods 70300 and 00530;

(5) addition of the results of Standard Methods 209B and 209D.

Any of these methods can be used by Inland and other steel companies to obtain an accurate reading of dry weight of spent pickle liquor and/or rinsewater. Inland currently uses the first protocol, ASTM Method D-1888 Method A, to measure the dry constituents of its injected waste.

One issue that has been raised with regard to dry weight calculation is the accuracy of the standard methods of measurement with regard to organic-containing wastestreams. A solution to this problem would be to base the tax on the calculation or measurement of water content.

STATEMENT OF THE INSTITUTE
OF SCRAP IRON & STEEL, INC.

The Institute of Scrap Iron and Steel, Inc., is the national trade association representing the metallic scrap industry. Institute members process, ship and/or handle over 95% of the ferrous scrap purchased in this country for domestic consumption or export and handle equally impressive volumes of the many non-ferrous scrap materials consumed domestically and exported. The Institute represents approximately 1,300 firms located throughout the United States.

The Institute's interest in Superfund arises because of three major conditions.

Strategic Metals Recycling

First, there are presently included among the taxable chemicals certain low volume but extremely important recyclable metals which are generally considered to be of "strategic" importance. Included in this listing are chromium and cobalt. Production of these strategic metals is currently taxed under Superfund at the rate of $4.45 per ton. The tax is the same regardless of whether these metals are produced from virgin materials or are reclaimed from obsolete materials or waste. This tax burden negatively impacts the recycling rate of these metals.

The Office of Technology Assessment (OTA), studying the problem of "Strategic Materials Technologies to Reduce U.S. Import Vulnerability," suggested that the nation: "Decrease the demand for strategic metals by improving manufacturing processes and *recycling of strategic metal from waste and scrap*." (emphasis supplied).

OTA concluded that it is necessary to "encourage the adoption of new materials technologies by providing assistance for education and training related to advanced materials, manufacturing technology, and *metal processing and recycling systems*." (emphasis supplied). OTA further noted:

> If the benefits of domestic mineral production are desirable from the public's perspective, however, assistance could be provided in the form of subsidies, purchase commitments, loan guarantees, tax incentives, or other Government financial aid. Such programs need not be limited to mineral production; processing of ores and metals, production of substitute materials, and *operation of recycling facilities* could be similarly encouraged. (emphasis supplied).

Thus, so important is the need to increase recycling of these metals that OTA recommended a subsidy or other governmental assistance program. In light of this recommendation, it would be far more reasonable to eliminate the current feedstock tax on these metals than to retain the tax, recognize the negative aspects of such a tax, and consider offsetting them with some form of governmental assistance. Thus, the Institute's first suggestion is to remove the Superfund tax on production of recyclable stratgegic metals in order to increase the recycling of those critical materials.

Metals Recycling in General

Suggestions have been made from time to time to add certain "common" metals to the list of taxable chemicals. Often suggested for inclusion are aluminum, copper, lead and zinc. The problem here is the same is that noted in regard to the strategic metals, but the volumes of materials involved are much larger.

While these are "non-strategic" metals, the significant recycling rates being recorded for each of them should not be jeopardized through an unnecessary and inappropriate tax on recycled production.

The reasoning is simple. Superfund dollars are needed not only to clean up sites which reflect improper disposal in the past, but also eventually to remedy the effects of continuing improper disposal practices. Obviously, to the extent that less hazardous waste is disposed of in the future, the need for Superfund dollars will be reduced. The most obvious way to reduce disposal is for the material to be recycled. Thus, to encourage recycling, there should be no Superfund tax on recyclable materials.

If the goal is minimal disposal, maximum recycling is necessary. A tax on recyclables will impact negatively on the secondary metals market, the rate of recycling will fall, and further dependence on virgin metals will result. As the rate of recycling falls, however, the recyclable wastes will not simply disappear. Metals that are not recycled will be discarded and eventually could produce additional Superfund sites.

While the exempting of all recyclable metals confers a preference, to do so is perfectly in accord with the long standing national goals to maximize recycling and to reduce the disposal of potentially hazardous materials.

Remember also that every pound of metal that is recycled has already been (or will have been when the system is complete) taxed at least once when it was produced as a virgin metallic. To tax recyclables means that the same pound will be taxed at least twice (or even more times, depending on the number of occasions it is recycled). Such a tax cannot encourage recycling; such a tax will encourage improper disposal.

Waste End Tax Proposal/Special Recycling Needs

The third condition deals with the need to exempt from any proposed "waste end" tax metallic recyclable exports and metallics received in hazardous waste management units for purposes of recycling, not for disposal.

The reasoning is unchallengable. If recyclable metallic exports are taxed, the market will be constrained; if so-called hazardous waste management operations are taxed, the market for materials now purchased by those facilities for recycling will be constrained. By way of illustration, if used automotive batteries cannot be recycled by a battery breaker (which could be considered a hazardous waste management facility) without a significant Superfund tax being paid, the number of such batteries recycled will decline. If the batteries cannot economically be exported to other parts of the world for recycling (not disposal) because addition of a Superfund tax makes them non-competitive, the batteries will remain in the United States. Because of the tax, however, the batteries will not be recycled domestically either, and thus must be disposed of some way. The potential for improper disposal is obvious.*/

Conclusion

The Institute respectfully request that the committee consider:

1. Exempting metallic recyclables diverted from solid waste for recycling and re-use and any recycled metals produced therefrom.
2. Exempting recyclable metals received at a qualified hazardous waste management facility for purposes of recycling and re-use.
3. Exempting metallic recyclables or recycled metals exported from the United States.

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*/ The rationale for taxing recyclable exports is highly questionable, regardless of its negative impact on the volume of such exports. The purpose of the revenues which go to the Superfund is to pay for cleanup of hazardous waste in this country. Exporting material for recycling abroad certainly does not contribute to the creation of such sites in the U.S.

By providing these needed exemptions, recycling will continue and will increase, thereby reducing future need for Superfund dollars. Unless such an exemption is included in the final bill, recycling will decline and the need for Superfund capital will increase. The best interests of the nation are served by providing these exemptions since they will work to maximize the level of domestic metallic independence and help minimize the hazardous waste threat.

The Institute has developed specific language to accomplish these goals, which is attached to these comments. The first proposed amendment deals with the "front end" tax; the second is concerned with modification of the proposed "waste end" tax. We stand ready to assist Committee staff by working on the details of these proposals.

PROPOSED AMENDMENT

"(a) Section 4662(b) of the Internal Revenue Code is amended by inserting the following at the end of that subsection:

"(7) Recycled Metal -- For purposes of this subchapter —

"(A) In General -- Except as provided in subparagraph (B), the term "taxable chemical" and the nonferrous metals listed in the table in Section 4661(b) shall not include any recyclable metal diverted or recovered from solid waste for recycling and reuse, or any recycled metal produced therefrom.

"(B) Exception -- Subparagraph (A) shall not apply to any recyclable or recycled metal sold by a taxpayer during any period (1) a site for which the taxpayer has responsibility is listed on the National Priorities List published by the Environmental Protection Agency under Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, and (2) the taxpayer fails to comply with any final order or judgment issued against the taxpayer in any action or proceeding under the Comprehensive Environmental Response, Compensation and Liability Act, as amended, the Solid Waste Disposal Act, as amended, or both.

"(C) For purposes of this paragraph, the terms —

(i) "Solid waste" shall have the meaning provided by Section 1004 of the Solid Waste disposal Act, as amended.

(ii) "Recyclable metal" means metal scrap and other metal bearing materials diverted or recovered from solid waste for recycling and reuse.

(iii) "Recycled metal" means any metal produced or derived from recyclable metal.

"(b) Section 4681 of the Internal Revenue Code is amended by inserting the following at the end of that subsection:

"( ) The tax imposed by subsection (a) of this section shall not apply to the receipt at a qualified hazardous waste management unit of any recyclable metal for the purpose of recycling and reuse, or to the exportation from the United States of any recyclable or recycled metal. For purposes of this subsection, the terms —

(i) "Recyclable metal" means metal scrap and other metal bearing materials diverted or recovered from solid waste for recycling and reuse.

(ii) "Recycled metal" means any metal produced or derived from recyclable metal.

(iii) "Solid waste" shall have the meaning provided by Section 1004 of the Solid Waste Disposal Act, as amended."

STATEMENT

on behalf of

THE NATIONAL ASSOCIATION OF SOLVENT RECYCLERS

SUMMARY

The National Association of Solvent Recyclers welcomes the opportunity to testify before the Committee on the potential impact of waste-end tax provisions on recycling activities in general and on our membership in particular. Very simply, we are requesting that the Committee specifically exempt solvent recyclers from any form of waste-end tax designed to tax hazardous waste disposal methods. Such a tax could disrupt the fragile economics of recovering spent solvents and discourage an activity which Congress has repeatedly recognized and encouraged as being environmentally-sound and a preferable alternative to disposal. Furthermore, because of the circular quality of reclamation, any waste-end tax on recovery of solvents would be assessed repeatedly, compounding the disincentive. We do not believe that this is the result intended by Congress and urge the Committee to properly reflect what we believe was the original intent of Congress to tax only those waste management techniques which resulted in "disposal" as that term is used in the Resource Conservation and Recovery Act. Suggested language is appended to our statement.

THE RECYCLING INDUSTRY

The recycling of industrial solvents has been a viable and necessary commercial enterprise for almost as long as the chemical industry has existed. NASR includes members whose businesses were started as early as 1937. The services our members provide their customers range from custom toll processing of generator-owned material, returned to the owner for a processing fee, to the blending of solvent-based fuels. The workhorse process is flash distillation in which a used solvent is boiled, the boiled vapors condensed as a clean solvent and the residue, the still bottom, blended to produce a solvent-based fuel. The material we process is classified as hazardous waste by the characteristics of ignitability or by source or composition. Many manufacturing processes would be prohibitively expensive to operate were it not for the ability to recycle valuable processing materials. Common examples of recycling in process and manufacturing industries are:

- Acetate-based film is cast from a solution in acetone and ethyl alcohol. The cast film is dried by evaporating the solvent; the solvent is recycled in the process.
- Penicillin is extracted from a fermentation broth by amyl acetate. The amyl acetate is recycled after the penicillin has been recovered.

- Solvents such as furfural, propane and dichlorethyl ether are used in the manufacture and refining of lubricating oils and then recycled.
- A number of solvents are used to extract caffiene from coffees and flavors and fragrances from a wide-range of sources. After the caffiene or the flavors have been recovered, the solvent is recycled.
- Drycleaners used solvents, typically the non-flammable chlorinated solvents, to clean water-sensitive fabrics.
- Paint manufacturers and the makers of other types of coatings, use "wash solvents" to clean their equipment between batches of different colors.

Not only does the solvent reclamation business recover solvents and restore them to their original product quality, but the wastestream generates a secondary product which cannot meet the standards for virgin material but which has a high BTU value. This material is generally destined for use in industrial applications, such as in steel blast furnaces or in cement kilns. The strictly-controlled physical and chemical parameters of the blast furnace and the cement kiln operations, coupled with extensive environmental regulations, assure complete and beneficial destruction of the solvent fuels.

A well-run full service recycler should have a minimum amount of totally-unprocessabl and unuseable residues that would be disposed of at EPA-regulated and approval disposal facilities.

From this brief description of the functions of the recycling industries, it should be clear that the valuable contribution of the industry is not only the reclamation of valuable resources, but the selection of environmentally-optimal waste management practices.

THE ECONOMICS OF RECYCLING

Recycling is an industry sensitive to basic economics as well as environmental concerns. The only reason our customers choose to use our services is that they can pay less to recycle their used material than they pay for its disposal added to the purchase of new. Were a waste-end tax of $30.00 per metric tons to be applied to recycled solvents, then the generator would have to pay an extra $0.10 per gallon for his returned solvents if he chose the recycling option. That extra cost would, in many cases, tilt the decision towards outright disposal.

Also, the cost of recovery and recycle is linked with the cost of handling the recovery residuals. Since most residual has considerable heat value, the cost of recycling can be reduced if the residuals' heat value can be beneficially realized by producing the solvent-based fuel for use in an industrial furnace such as a cement kiln or a blast furnace. Yet, this is a use for which conventional fuels--oil and coal--also compete. No matter how environmentally-attractive it may be to use a solvent-based fuel in place of coal to manufacture cement, this will not happen if the plant operator cannot achieve some economic benefit.

Consider the use of coal as opposed to a solvent-based fuel to fire a cement kiln. At today's spot prices for coal--namely, $35.00 per ton--a typical solvent-based fuel is worth about $0.135 per gallon on an equivalent BTU basis.*/ Were the waste-end tax of $30.00 per metric ton to be applied to the solvent-based fuel, it would be necessary to add another $0.11 per gallon to the selling price of the fuel. Such taxation would seriously damage the economics for recycling as opposed to direct disposal by rendering the cost of solvent-based fuel too high relative to coal. The net result would be the creation of a new hazardous waste disposal problem, which because of unfavorable economics in the recovery and recycle option, would be resolved through some less environmentally-desirable method of disposal--primarily land disposal. And only one cement plan using a solvent-based fuel as 20 percent of its hearing material can typically burn 20,000 gallons of solvent-based fuel per day.

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*/ Assume one ton of coal yields 26,000 BTU and one gallon of a solvent-based fuel yields 100,000 BTU.

NASR does not believe Congress intended to impede by selective taxation a practice, e.g., recycling, that it has sought to encourage under the Resource Conservation and Recovery Act.

REVENUE CONSIDERATIONS

NASR wishes to emphasize that the exclusion of recycling and reuse activities from the waste-end tax will not disrupt the revenue-generating assumption and goals of the drafters of this legislation. It is our understanding that the estimated revenues were calculated without including any assessments for recycled or reused materials.

THE FEEDSTOCK TAX

Although the issue is not squarely before the Finance Committee in this legislation, NASR wishes to bring attention to potential obstacles to beneficial reclamation that may be raised by the Internal Revenue Services's implementation of the Feedstock Tax created in Subchapter B of CERCLA (26 U.S.C. § 4661). The waste-end tax is imposed on the manufacture, production or importation of certain taxable chemicals. The taxable chemicals include xylene and toluene which are important components of most recyclers' product mix. We do not believe that the Congress intended that recycling activities would be taxable under Subchapter B. The plain meaning of the statutes suggests recycling would not be included because it is not manufacturing. Nevertheless, the Internal Revenue Service has proposed regulations (48 Fed. Reg. 48,839 (Oct. 21, 1983)) which, because of some ambiguities in the preamble, could result in the taxation of solvent reclamation. We believe recyclers should not be considered "manufacturers or producers" under the proposed regulations because they are not manufacturing a product; they are providing a service to recover a product which has already been manufactured. In addition, the substances which are recovered by the recyclers already have been taxed under the Act when they were "manufactured." Such a result would create disincentives to recycler which would be contrary to goals of both the Resource Conservation and Recovery Act and CERCLA. By upsetting the fragile economics of recycling, there would be a dramatic increase in the volume of hazardous materials that would be disposed either on and or in injection wells which is less environmentally-desirable result. NASR also believes that the recovery and direct return of reclaimed substances to the owner (toll processing) is a transaction that is not a sale as that term is used in the Act, and is therefore not a taxable event.

NASR responded in detail to the problems posed by the IRS draft regulations. We are appending a copy of our comments to this testimony to assist the Committee in examining this issue. Because we believe that this is an unintended impediment to recycling and to the objectives of CERCLA, we strongly suggest that the Finance Committee in its report language of Superfund include legislative history which will guide the Internal Revenue Service in promulgating regulations which fully respond to the intentions of Congress.

* * *

Thank you very much for the opportunity to testify, and we again pledge our interest in working with the Committee staff in resolving these issues.

Statement of the

National Association of Stevedores

Presented to the

Committee on Ways and Means

on

The Superfund: Proposed Revenue Measures and Uses

Submitted by

Thomas D. Wilcox
Executive Director and General Counsel

National Association of Stevedores
2011 Eye St., N.W.
Suite 601
Washington, DC 20006

May 16, 1985

The National Association of Stevedores (NAS) is an association of privately-owned stevedore and marine terminal companies, providing essential cargo-handling services on all four U.S. seacoasts, the States of Hawaii and Alaska, the Commonwealth of Puerto Rico, and at various inland ports. Two major reasons compel our discussion of the proposed revenue measures and use of Superfund.

The first reason is the possible outcome of the U.S. Government's interpretation of the International Convention for the Prevention of Pollution from Ships (1973) as modified by the 1978 Protocol on Marine Pollution (MARPOL). Under current law, NAS members do not fall within any statutory definition of a person or entity that would render them subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Stevedores and marine terminal operators are not owners or operators of hazardous waste management facilities. Nor are they generators, transporters, storers, or disposers of hazardous waste.

The purpose of MARPOL is the reduction of pollution from ships at sea. This is accomplished by requiring the discharge of hazardous wastes to reception facilities ashore, rather than at sea. The implementing legislation for MARPOL, 33 U.S.C. Section 1905, directed the Coast Guard to set criteria for determining the adequacy of waste reception facilities at U.S. ports, and procedures for certifying a port or terminal as having adequate reception facilities.

What traditionally has been pumped overboard far out at sea must now be pumped ashore and someone must arrange for shoreside disposal. Coast Guard regulations do not yet make clear the position of the stevedore/marine terminal operator in the MARPOL regime, particularly as it would relate to CERCLA or the Resource Conservation and Recovery Act (RCRA). However, the objective of the stevedore/marine terminal operator is to stay out of the hazardous waste management business.

Second, the NAS is opposed to what we perceive to be bad public policy both in the form of inequitable revenue measures, and measures that detract from the primary Superfund goal of hazardous waste cleanup.

SUPERFUND REVENUE PROPOSALS

As the magnitude of the problem of hazardous waste increases, Congress and the Nation are searching for a means to pay for cleanup. NAS members support the cleanup of hazardous waste, and believe that the cost of undoing the damage caused by toxic pollutants should be borne by the industries that introduced them into the environment. Thus, the NAS opposes the concept of a broadly-based corporate net profits tax (NPT) assessed against industries and employers that do not generate, manufacture, or use toxic pollutants.

There are now three bills before the Senate that would tax U.S. industry in general: S. 596, introduced on March 6, 1985 by Senator Bradley; the corporate net profits tax provision contained in proposed Amendment No. 7 to S. 51, introduced on January 3, 1985 by Senator Stafford; and S. 957, introduced by Senators Wallop and Bentsen, which would impose a "manufacturer's excise tax" on the sale or lease by a manufacturer of the goods it produces. Attempts to diffuse cleanup costs throughout industry in general would be unfair to those industries and employers, such as NAS stevedores and marine terminal operators, who have in no way contributed to the hazardous waste problem. Moreover, to the extent that the costs of cleanup are imposed upon blameless industries, major polluters would escape their liability.

If Congress should enact a tax such as the NPT, the NAS believes that the tax must be fair. Amendment No. 7 is not fair. This Amendment, introduced by Senator Stafford, would revise Chapter 38 of the Internal Revenue Code to permit the imposition of an Environmental Net Profits Tax on corporate net receipts [131 Cong. Rec. S526 (daily ed., January 22, 1985)]. In determining net taxable receipts for purposes of the new tax, the provision would permit a deduction by the corporate taxpayer of the costs of goods sold by the taxpayer during the relevant tax year (Id., at S528). However, no reference is made to the allowance of a similar deduction by a corporate taxpayer for the costs of services sold.

The tax burden that would result from the Environmental Net Profits Tax proposed by S. 596, introduced by Senator Bradley on March 6, would be even more onerous than that contemplated by proposed Amendment No. 7. This bill proposes a lower threshold of corporate receipts to trigger operation of this tax, and increases six-fold the taxpayer's potential net liability over that contemplated by proposed Amendment No. 7. In addition, S. 596 also fails to refer to the allowance of a deduction by a corporate taxpayer of the costs of services sold for purposes of computing this tax. The NAS believes that this is a crucial omission. Our concern is that this tax provision, in either form, will result in unfair and unwarranted discrimination against the stevedore and marine terminal industry because it provides services, and is not a seller of goods.

Should either S. 596 or proposed Amendment No. 7 to S. 51 become law, NAS stevedores and marine terminal companies, as well as other service industries, would be confronted with an inequitable and uncertain situation. The failure to mention a deduction for costs of services sold would deny a deduction for these costs to service industries, and impose upon them an immense and inequitable additional financial burden. This burden would result because their corporate income is derived from the sale of services and not the sale of goods. The NAS urges the Committee to ensure that any tax provision of this nature makes available to corporate taxpayers a deduction for the costs of goods sold, and/or the costs of services sold.

A number of other proposals for generating Superfund revenue also have been made, including the expansion of the taxable chemical feedstock list, increasing feedstock tax rates, imposing a waste end tax, and the taxation of imported feedstock derivatives. There also have been recommendations that Superfund revenue be augmented through the use of General Revenues, and increased cost recovery through the collection of fines, costs and penalties assessed under CERCLA. The NAS takes no position at this time on the merits of any of the specific measures referred to above because the general impact of those revenue proposals would be felt most likely by industries other than the stevedoring and marine terminal industry.

However, where international trade is involved, the NAS opposes any government action which could interfere with or restrict the flow of U.S. international commerce. For example, H.R. 1775 would tax the feedstock content of imported products based upon that feedstock's U.S. tax rate. It is clear that sucn a measure is yet another barrier to foreign trade. The NAS is opposed to needless barriers to foreign trade.

FEDERAL CAUSE OF ACTION -- CITIZENS' SUITS

The NAS opposes any measure which would detract from Superfund's primary objective, viz, the elimination of threats to public health and the environment that stem from mismanagement of hazardous waste.

Four Superfund bills currently under consideration would permit private citizens to seek to enjoin in a federal court government and/or private action (or lack of action) where a toxic hazard exists or is undergoing abatement. The NAS opposes the creation of yet another federal cause of action, this one under CERCLA.

S. 493 provides the narrowest scope of options available to private citizens. This bill would permit a person to bring a civil action for injunctive relief against the government, or any generator of hazardous substances that poses "an imminent and substantial endangerment to health or the environment." Such relief would also be available against the EPA where there is alleged a failure to perform non-discretionary duties.

The federal cause of action/citizen suit provision in both S. 51 and S. 596 is not so narrowly drawn. The major difference between the citizen suit provisions of S. 493 and S. 51/S. 596 is the remedy each would allow. S. 493 limits the remedy exclusively to injunctive relief. On the other hand, Section 138 of both S. 51 and S. 596 reads in part:

> "Nothing in this Act shall restrict or expand any right which any person (or class of persons) may have under any Federal or State statute or common law to seek enforcement of any standard or requirement relating to hazardous substances or to seek any other relief.." (Emphasis added).

This appears to open the door to state tort actions being brought into federal district court based upon that court's pendent jurisdiction. The phrase "..or to seek any other relief.." is the key that opens the door. It terminates the limitation of remedies available to private citizens to injunctive relief.

For example, the party bringing suit against an alleged polluter might seek federal injunctive relief and also assert a claim for damages based upon state statutes or common law. As the matters arise from the same toxic incident, they would be within the court's pendent jurisdiction. Another possibility would be a private citizen with a state law tort claim intervening as of right in a pending federal court action against an alleged polluter. Thus, rather than encouraging "..private enforcement by allowing [only awards of attorney's fees and costs] to private plaintiffs where the court determines that the bringing of the action was in the public interest..", as contemplated in the Report Accompanying S. 51 [H.Rep.No. 99-11, 99th Cong., 1st Sess. 63 (1985)], the citizen's suit provision of S. 51/S. 596 would become the vehicle by which private citizens could seek the purportedly better relief offered in federal court for a state tort claim.

THE FEDERAL CAUSE OF ACTION -- CITIZENS' SUITS UNDER H.R. 2022

The provisions for citizens' suits in H.R. 2022 are quite similar to those in S. 51/S. 596. However, H.R. 2022 would create expressly a number of potential defendants that could be the objects of federal suits brought under CERCLA. These include owners/operators of vessels or facilities where hazardous wastes were disposed; any person who contracts, agrees, or otherwise arranges for disposal, treatment or transport of hazardous substances, regardless of ownership, at the facility of another; or any person who accepts hazardous substances for transport to another facility or site. The liability of these potential defendants under H.R. 2022 would be strict, joint and several.

H.R. 2022 would allow a plaintiff in federal court under the CERCLA cause of action to recover for a wide range of medical expenses, losses of income and profits, economic loss, property damage, pain and suffering, and litigation costs. Aside from the fact that the volume of litigation attributable to a CERCLA cause of action would further swamp an already overburdened federal court system, and that the transactional costs associated with such a cause of action would be enormous, a number of pragmatic concerns also militate against this proposal.

None of the bills that propose a federal cause of action under CERCLA answer such important questions as from where the funds to satisfy enormous toxic tort judgements will come -- or what the effect on worker's compensation systems will be -- or where the evidence of the need for a federal cause of action under CERCLA exists. These measures do not suggest ways to discourage illegal dumping by toxic waste polluters. However, they would penalize unfairly one who contributes unintentionally to pollution, unknowingly pollutes, or otherwise has complied with the law in good faith.

THE STRICT, JOINT AND SEVERAL LIABILITY STANDARD

Enactment of a federal cause of action under CERCLA would lead to another important issue -- that of the standard for determining liability following a judgment in or the settlement of a toxic waste suit in federal court. Strict joint and several liability implicit in some of the pending measures, and explicit in one (H.R. 2022), extends liability and total financial responsibility for a toxic hazard at a given site to any person or entity who may have generated or placed a substance into the site. The strict joint and several liability provision of H.R. 2022 would eliminate even the common law requirement of causation. A toxic tort defendant would be responsible for all of the damage done despite the fact that the plaintiff might not be able to single out that defendant's act as causing the injury. A defendant would be held responsible under H.R. 2022 even if his contribution to a site was not a hazardous substance.

MARPOL AND THE STRICT, JOINT AND SEVERAL LIABILITY STANDARD

NAS concerns about this unfair standard of liability stem from the MARPOL proceedings. The NAS believes that the federal government's goal of 100% Superfund cost recovery behind the strict joint and several liability standard could be given greater weight by the Environmental Protection Agency (EPA) deliberations over defining "generators" for purposes of the

CERCLA - MARPOL link, than the fact that a ship's pumps introduce toxic wastes into the environment at the pier, and not the activities of the stevedore/marine terminal operator. The following illustrates NAS concern.

A vessel carrying some form of toxic or oily waste arrives at a marine terminal, and arranges for the discharge of the waste from its tanks to a tank truck owned by an independent waste management company. Upon completion of this operation, the vessel leaves. On its way to the waste disposal site, the tank truck jack-knifes, and pollutes the local drinking water reservoir. In this situation, the NAS foresees a desire to include a stevedore/marine terminal operator as a generator of hazardous wastes because of its inability to weigh anchor and steam away from the jurisdiction like a ship, and the likelihood that the assets of a highly-capitalized marine terminal are more valuable than a local trucking company or hazardous waste site owner. The imposition of strict joint and several liability truly would offend basic notions of fairness. In this instance, the stevedore/marine terminal operator has done nothing more than provide a berth for the vessel and a place to park the truck. The standard of liability would be based solely upon a potential defendant's ability to pay, and not upon overt acts causing the introduction of toxic wastes into the environment.

The impact upon the stevedore/marine terminal industry of being brought into the hazardous waste generation/handling cycle by further implementation of MARPOL would be disastrous. MARPOL, alone, would compel the stevedore/marine terminal operator to perform the nearly impossible feat in today's insurance market of finding toxic tort coverage for his own responsibilities. The strict, joint and several liability standard would force him to repeat this feat to protect himself from the acts of others. When the risks faced by an employer mount to such an extent that they become unmanageable, the NAS believes that incentive to comply with the law, or even stay in business, is destroyed.

In summary, the NAS is concerned that a number of current Superfund proposals, such as the demonstration project of victim's assistance and those described above, indicate a departure from the primary objective of cleaning up hazardous waste dumps, and ensuring a solid revenue base from which to continue this process. The NAS urges Congress not to allow Superfund to become an impediment to those whom it is meant to benefit by burdening it with provisions not consistent with the primary goal: hazardous waste prevention and cleanup.

NATIONAL
CAMPAIGN AGAINST
TOXIC HAZARDS
Room 401, 1300 Connecticut Avenue Washington, D.C. 20036 (202) 857-6153 • 600 West Fullerton Parkway Chicago, Illinois 60614 (312) 975-3880

April 25, 1985

Dear Representative:

The Congress will soon begin debate on perhaps the most important environmental bill to be considered this session: reauthorization of the Superfund program due to expire on October 1, 1985.

In order to help Congress and the public assess the effectiveness of the Superfund program over its first five years, the National Campaign Against Toxic Hazards studied EPA's spending to determine the level of commitment to the long-term cleanup of the nation's most hazardous waste sites. Our study, "Superfund Spending: Breakdown of Obligations 1981-1985," is enclosed for your interest. The study reviews our overall findings and provides state-by-state information on the priority sites not receiving long-term funding commitments.

The most important finding of our study is that 90% of the nation's most dangerous identified waste sites will not have received even initial long-term cleanup funding by the time the first phase of the Superfund program ends on October 1, 1985. In FY1985, only 29 sites are scheduled to receive long-term cleanup obligations according to EPA. At this rate, it will take decades to cleanup the most dangerous sites currently threatening the nation's environment and the public health of its citizens.

The National Campaign Against Toxic Hazards is committed to working with Congress to correct the Superfund program's deficiencies. To accomplish that, we have endorsed H.R. 2022, the Superfund Expansion and Protection Act of 1985, introduced by Rep. Gerry Sikorski this month. H.R. 2022 will protect the public by enlarging the Fund to $11.7 billion, establishing mandatory cleanup schedules and standards to ensure that adequate cleanups are obtained, requiring permanent treatment of hazardous wastes, protecting toxic victims through a federal cause of action and victims' assistance demonstration program, and creating a national community right-to-know.

We urge you to join us in supporting H.R. 2022. Should you have any questions about our study or wish more detailed information about Superfund spending in your state, please do not hesitate to call the National Campaign at 775-0370.

Sincerely,

John O'Connor
Campaign Director

BEST COPY AVAILABL

Statement

# of the

Rubber Manufacturers Association

The Rubber Manufacturers Association ("RMA") respectfully submits the following comments on S.51, a bill to extend and amend the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") or "Superfund." RMA is a national trade association representing the tire and rubber industry with a membership of approximately 200 companies which employ approximately a quarter-million workers. Member companies produce some 40,000 products including tires, tubes, hose, belts, footwear, roll covering, gaskets, sealing devices, hospital and surgical supplies and sports equipment. RMA members account for approximately 90 percent of all rubber production in the United States. The rubber industry is a major user of chemicals and, as such, has a longstanding interest in and commitment to the control of hazardous and toxic waste.

The RMA supports the reauthorization of Superfund. However, we believe that funding levels should be based on realistic assessments of the Environmental Protection Agency's ("EPA") annual spending needs. Funding levels in S.51 appear to be excessive. Overfunded and inefficient programs have no place in the critical national task of cleaning up abandoned hazardous waste sites. Hazardous and toxic sites must be cleaned up in order to protect the nation's health and environment. However, burdening the Superfund program with excessive funds or additional tasks will only detract from this goal.

As stated above, RMA maintains that the $7.5 billion authorization level called for by S.51 is excessive and has not been justified. A more realistic and more workable funding level than that contained in the subject bill would be $1 billion per annum. EPA Administrator Lee Thomas spoke in similar terms during his confirmation hearing on February 6, 1985, calling for a $1.1 billion per year level.

RMA believes that it is important for Congress to make a precise determination of what EPA will need over the next five years to successfully manage the cleanup. Congress can best determine what EPA needs for Superfund reauthorization when it:

1) examines the accomplishments of the startup effort;

2) studies current progress being made to clean up sites; and

3) prescribes the manageable resources and goals for the next five years.

In addition to our comments on the funding levels, the RMA wishes to express its strong opposition to amendments to CERCLA which unnecessarily expand the scope of the Act, namely, provisions for a federal victim compensation program and a hazardous substances inventory.

The victims' assistance program warrants careful scrutiny by the Committee because it would establish an entirely new right to compensation from the federal government. It raises a number of broad scientific, social, economic and legal issues that deserve careful consideration. There currently exists an enormous amount of resources for persons requiring medical evaluation, medical care or compensation for injury, disease or death from almost any cause. These resources include insurance coverage, workers' compensation, tort liability, no-fault administrative remedies and publically financed programs such as Medicaid and Medicare. The expenditure of additional money on a demonstration program cannot be justified unless existing programs can be shown to be insufficient.

The hazardous substances inventory program would impose not only extremely burdensome information gathering and reporting requirements on smaller companies, but also great expense in complying with its provisions.

In conclusion, the RMA wishes to stress that it supports reauthorization of Superfund. That authorization, however, should take place after thorough analysis and should contain balanced funding levels and be restricted to the original purpose of Superfund, namely, the cleanup of waste sites.

April 18, 1985

STATEMENT BY LOUIS R. LAWSON, JR.
ON BEHALF OF SOLITE CORPORATION

BEFORE THE
SENATE FINANCE COMMITTEE
HEARING ON COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA)

Solite Corporation manufactures lightweight aggregate, a product used by the construction industry in concrete and in lightweight masonry blocks. Lightweight aggregate is produced in rotary kilns through the application of intense heat to expand crushed clay, slate or shale. Lightweight aggregate weighs approximately half as much as crushed stone. It has many unique applications related to its lightweight and thermal/insulating characteristics. For example, most of the bridge decks around Washington including the recently refurnished Woodrow Wilson bridge contain lightweight aggregate to prevent the freezing and thawing cycles in the winter which result in pot holes and eventual deterioration of the entire deck.

Solite uses large amounts of ignitable wastes consisting principally of industrial solvents as fuels in its manufacturing process in six locations in the east and midwest. Since 1972 Solite has safely burned over 100 million gallons of ignitable wastes amounting to a savings of conventional energy sources equivalent to over 75 million gallons of oil or over 400 thousand tons of coal.

The Environmental Protection Laboratory in Cincinnati has recently completed an $8 million study of 31 facilities burning hazardous wastes (incinerators, industrial boilers and industrial furnaces/rotary kilns). Two of these tests were conducted in Solite plants. The Agency has concluded that these facilities can burn hazardous waste as fuels and dispose of it without any threat to human health or the environment. The EPA endorses and actively promotes the use of ignitable wastes as fuel in processes such as ours.

We recommend that this useful savings of energy be excluded or exempt from the waste-end taxes being considered as revenue producing sources for the Superfund bill. The EPA estimates that only 350 thousand tons of the 264 million tons of hazardous wastes can be burned as fuel. Exclusion of this beneficial use of hazardous wastes would reduce the anticipated $6 million from waste-end taxes and would the anticipated revenues by less than one tenth of one percent. The exclusion of energy savings processes such as Solite's from waste-end taxes would not only help promote and encourage the safe and efficient destruction of wastes for energy savings, but also help to ensure that cost-effective waste fuels facilities such as those in the lightweight aggregate, cement, iron, steel, lime and phosphate industries.

Companies such as Solite can afford to continue to use wastes as fuels only as long as the cost of burning these wastes is less than the cost of conventional fuels such as oil and coal. The imposition of a waste-end tax on wastes burned for energy savings would have a significantly adverse impact on the cost-effectiveness of burning hazardous wastes in place of fossil fuels. The fee would add to the cost of burning wastes and along with the other costs of burning these waste fuels in an environmentally protective manner, further narrow the gap between the cost of burning waste fuels and the cost of burning conventional fuels. The fee proposed by the Administration would narrow this gap by a significant 10-20 percent.

The ultimate impact of a waste-end fee or tax on wastes used as fuels will be to discourage their use for energy recovery. The result would be extremely unfortunate, not only for the industries that rely on these waste fuels to hold down production costs, but also for the environment and natural resources of our Nation. Millions of gallons of burnable wastes that otherwise would have been safely destroyed would be disposed of either improperly or by methods less protective of the environment than high-temperature thermal destruction. Further, millions of gallons of oil or thousands of tons of coal would be burned needlessly.

Solite proposes an incentive-based waste management tax. Such a tax (1) would encourage the use of methods of waste management that are environmentally protective, (2) would encourage economically beneficial energy recovery activities, and (3) is fair in that it would recognize the absence of any connection between Superfund sites and energy savings facilities such as those owned and operated by Solite.

One of the principal objectives of a waste-end or waste management tax, aside from the generation of revenue, should be to penalize, and thereby reduce, the disposal of hazardous waste into the environment. Consequently, any such tax should be carefully considered to insure that it will not penalize environmentally desirable methods of managing waste, such as the thermal destruction of wastes for energy savings.

In addition to being environmentally protective and energy saving, the processes are economically beneficial because they involve using wastes as a fuel, and not simply the destruction or treatment of wastes to get rid of them (incineration). From an economic standpoint the latter is simply another cost that must ultimately be borne by the consumer. The burning of wastes simply to destroy them costs industry approximately $300-350 a ton. Burning wastes as fuel costs $30-40 a ton providing an economical service to industry in addition to the benefits cited above.

A waste-end or waste management tax can easily be crafted to apply to hazardous wastes that are disposed into the environment, without including wastes that are used for energy recovery. The simplest way of accomplishing this objective is by providing that the tax applies to the receipt by a hazardous waste disposal facility of waste that is disposed of or held in long-term storage. "Disposal" should then be defined to exclude recycling and energy recovery, since they do not involve the release of hazardous waste into the environment.

Essentially, this is the approach taken in the recently introduced Moynihan-Bentsen Superfund bill, S.14, (1) The definition of "disposal" is clearly intended to include only those waste management practices that may result in hazardous waste entering the environment, i.e., "the discharge, deposit, injection, dumping or placing of any hazardous waste into or on any land or water so that such hazardous waste may enter the environment." (emphasis added).

The relevant provisions of Senator Stafford's proposed "Environmental Toxics Tax" are not as explicit as S.14, but the intent is apparently the same, that is, to impose the tax only upon hazardous wastes that are released, in hazardous form, into the environment. The language of the Moynihan-Bentsen bill is preferable because it clearly excludes recycling and energy recovery by including them within the definition of "treatment". The Stafford amendment would apparently accomplish the same objective by negative implication, but is potentially ambiguous.

The definitions of "disposal" and "treatment" contained in S.14 or similar language could be used in the drafting of legislation based on the "Incentive Waste-end Tax" component of the "Combination Tax II" option that is analyzed in the CERCLA Section 301 (a) (1) (G) study.

We appreciate the opportunity of making our views known to your committee and respectly request that you favorably consider our recommendations in preparing the legislation for Senate deliberation. If there are any questions, please call me at (804) 798-7981.

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(1) S. 14, Section 4692 (a) (1), (6), (7) and (8)

SOLITE
CORPORATION

P. O. BOX 27211 • RICHMOND • VIRGINIA 23261 • PHONE AREA CODE 804 321-6761

April 25, 1985

Senator Robert Packwood, Chairman
Senate Finance Committee
259 Russell Senate Office Building
Washington, D.C. 20510

Dear Senator Packwood:

I have submitted a written statement to your Committee concerning some of the various proposals now before your Committee to partially fund the Superfund program (S-51) through the imposition of "waste-end" taxes. Last year I testified before the Senate Environment and Public Works Committee and the House Ways and Means Committee recommending that waste-end taxes not be structured to discourage treatment or uses of wastes that are economically attractive and environmentally responsible. The beneficial use of burning ignitable wastes as industrial fuel was exempted in the House bill. The Senate bill did not reach your Committee before recess.

In many states ignitable wastes such as spent industrial solvents, distillation residues and by-products of chemical processes are burned as fuels in industrial furnaces in the manufacture of commercial products. The EPA conducted test burns in over 30 industrial facilities burning ignitable wastes as fuel. The EPA tests demonstrated that industrial furnaces and industrial boilers can destroy ignitable wastes with the same efficiencies as commerical incinerators and with no threat to human health or to the environment. The ignitable wastes used as fuel also save energy that would otherwise have to be obtained through the the burning of conventional natural gas, oil or coal. For these reasons, I urge you to exempt or exclude the beneficial use of ignitable wastes as fuel in industrial furnaces and industrial boilers from waste-end taxes.

Exclusion of wastes burned for energy savings in industrial furnaces would have a very minor impact on the revenue producing potential of a waste-end tax. Ignitable wastes suitable for use as fuels are a very small fraction of the total volume of hazardous wastes. Excluding or exemption of these wastes from taxation would reduce the estimated revenues of the Administration's proposed waste-end tax by less than one tenth of one percent.

Senators Bentsen and Moynihan have offered an ammendment (S 41) which would exclude the taxation of the beneficial use of ignitable wastes as fuel. Senator Proxmire has introduced a bill (S 886) which would tax waste treatment if it did not render the waste non-hazardous in a year. Both bills would effectively exclude taxing the benefical use of burning ignitable waste as fuel. The Bentsen-Moynihan ammendment would have the advantage of eliminating bureaucratic paper work. The Proxmire ammendment would have the advantage of monitoring the location and treatment of waste although this is presumably being done in the EPA manifest system. I hope you and your Committee will give these proposals or some similar recommendation consideration and approval in drafting the final Superfund bill.

I am enclosing a copy of my written statement to your Committee, brief "position papers" with substantiating details of my recommendation and a brochure describing our beneficial use of ignitable wastes as fuel. If you or your staff have questions, please call me at (804) 798-7981.

Thank you for your consideration of my recommendations.

Very truly yours,

Louis R. Lawson Jr

Louis R. Lawson, Jr.
Research Co-ordinator

CC: Members, Committee on Finance
Staff, Committee on Finace

OLDOVER CORPORATION
DEDICATED TO PROTECTING THE ENVIRONMENT
P. O. BOX 228 • ASHLAND, VIRGINIA 23005 • TELEPHONE (804) 798-7981

April 29, 1985

Ms. Anne Cantrel
Senate Finance Committee
219 Dirksen Senate Office Building
Washington, DC 20510

Dear Ms. Cantrel:

I have talked with Ms. Libby Whitley, legislative aide to Senator Trible, about the procedure for submitting a written statement on the Superfund bills now being considered by the Senate Finance Commmittee. She told me to send five copies to your attentioin. Attached are the copies of our recommendation to the Committee concerning some of the various proposals now before your Committee to partially fund the Superfund program (S 51) through the imposition of "waste-end" taxes.

In many states ignitable wastes such as spent industrial solvents, distillation residues and by-products of chemical processes are burned as fuels in industrial furnaces in the manufacture of commercial products The EPA conducted test burns in over 30 industrial facilities burning ignitable wastes as fuel. The EPA tests demonstrated that industrial furnaces and industrial boilers can destroy ignitable wastes with the same efficiencies as commercial incinerators and with no threat to human health or to the environment. The ignitable wastes used as fuel also save energy that would otherwise have to be obtained through the burning of conventional natural gas, oil or coal.

Exclusion of wastes burned for energy savings in industrial furnaces would have a very minor impact on the revenue producing potential of a waste-end tax. Ignitable wastes suitable for use as fuels are a very small fraction of the total volume of hazardous wastes. Excluding or exemption of these wastes from taxation would reduce the estimated revenues of the Administration's's proposed waste-end tax by less than one tenth of one percent.

Enclosed with the written statement are copies of brief "position papers" with substantiating details of my recommendation and brochures describing our beneficial use of ignitable wastes as fuel. If you or other members of the staff or committe members have questions, please call me at (804)798-7981.

Thank you for your consideration of my recommendation

Very truly yours,

Louis Lawson

Louis R. Lawson, Jr.
Research Co-ordinator

OFF-SITE VS. ON-SITE BURNING OF HAZARDOUS WASTES AS FUEL

Two of the purposes of the Administration proposed waste-end taxes to support the Superfund program are to encourage (1) the highest degree of waste reduction possible by the generator and (2) the burning of hazardous wastes on-site . Everyone agrees that these are worthy objectives. On the other hand, penalizing /taxing off-site burning of hazardous waste as fuel simply because it has been moved from one place to another has a built in /unfair bias which should be recognized and addressed in considering waste-end taxes.

The EPA estimates that a relatively small fraction of the total tonnage of wastes generated can be burned as fuel. They estimate only 350 thousand tons of the 260 million tons generated annually can be/is being burned off-site as fuel. Neither the EPA nor anyone else has data on the amount of hazardous waste being burned as fuel by industry on their own premises/on site. Being the largest off-site user/burner of ignitable wastes in the nation, we are probably in a better position than the EPA or anyone else to estimate the amount of hazardous waste being burned on-site because every gallon burned on-site is lost to us.

We know that most, if not all, large generators of organic chemicals (the largest source of ignitable wastes) have the capability of burning materials in on-site incinerators or boilers; mostly the latter. This is particularly true of large manufacturers or users of organic solvents; the largest source of ignitable wastes available to industrial furnaces and boilers for burning as fuel. The bias or unfairness of the waste-end taxes on ignitable wastes burned off-site is that the tax is imposed on the receivers of the waste. So long as the waste is burned on-site it is not taxed. Under the Administrations proposed ammendments the simple act of transporting ignitable materials to a secondary site for burning as a fuel requires that they be classified as hazardous waste and subjects to a waste-end tax. We think this is unfair and should be exempt or excluded from waste-end taxes.

Economics and good hazardous waste management practice have led many large manufacturers or users of organic solvents to have their spent or dirty materials recycled by distillation to recover the clean solvents for reuse. After distillation, liquid waste residues containing dissolved organic resins, varnishes and other ignitable/burnable materials are left behind in the distillation units. Some of these are burned on-site by the solvent recyclers but the majority must be shipped to off-site burners because of the large quantities involved. These "still bottoms", as they are called, are the largest single source of ignitable wastes available for burning as fuel. Were these materials burned on-site by the recyclers they would not be classified as hazardous wastes. Transporting these materials to secondary sites for treatment/burning requires that they be re-classified as hazardous wastes.

One of the elements the Administration emphasizes in supporting the creation of a waste-end tax in the proposed ammendments to CERCLA is to "focus on the type of industries and practices that have caused the problems that are addressed by the Superfund". Solite and other companies using ignitable wastes as fuel are part of the solution to the problem of proper hazardous waste treatment not the creation of the problem. Solite,for example,has burned over 100 million gallons of ignitable wastes since 1972 amounting to energy savings of over 75 million gallons of oil or 400 thousand tons of coal. We estimate that the total of the other facilities burning ignitable wastes as fuel is about the same amount.

The EPA continues to point out that incineration/burning wastes is the most environmentally desireable alternative in converting hazardous wastes is to inert, harmless materials. At the same time, the EPA points out that there are not enough on or off-site incinerators in operation to burn all of the ignitable hazardous wastes created each year. The largest of the less than a dozen off-site incinerators burned only 30 thousand tons of wastes last year.

The average cost of off-site land based incineration of hazardous wastes is $300-500 per ton. The proposed charges for at-sea incineration are estimated to be in the range of $750-1,250 per ton. Solite and other companies using ignitable wastes as fuel not only provide additional incineration/burning capacity but they also provide this service to industry at approximately ten percent of the cost of commercial incineration.

Industrial furnaces charge between $25 and 50 a ton for burning ignitable wastes as fuel . The reason for the large difference in incineration/fuel burning charges is that the commercial incinerators are burning the ignitable wastes along with toxic hazardous wastes and must charge for the service. The burners of waste for fuel have the economic advantage/ benefit of recovering/using the energy available from the wastes in their manufacturing processes and as a result can charge less for the service. This inexpensive, environmentally effective service to industry should be rewarded not penalized with a waste-end tax.

IMPACT OF PROPOSED WASTE-END TAXES ON USE OF HAZARDOUS WASTE AS FUEL

Highly competative, energy intensive manufacturing industries are the only companies using hazardous waste as fuel to reduce production costs. The nearest economical alternative to the use of waste as fuel is coal. Any waste-end tax which would raise the net cost of the waste to these industries would narrow the gap between the use of waste compared to coal.

The use of wastes as fuel is operationally more difficult than the handling of coal. In addition, the costs of obtaining permits from the EPA to store and use wastes as fuel have steadily increased making their use less attractive. If the industries using wastes as fuel are forced to return to their traditional fuel, coal, because of waste-end taxes the industries generating these wastes will have to have their materials taken to commercial incinerators at more than ten times the cost of having them destroyed by the fuel users. In the long run, the public will for this change in increased prices.

The ammendments originally proposed by the Administration of $2.61 per ton would have narrowed the margin between the use of waste as fuel and the use of coal by nearly one third. The Administration has unveiled an alternate plan which would impose a $35/ton tax for most land-based methods of treatment, storage and disposal. Such a tax would force industrial furnaces to abandon the use of wastes as fuel.

On the positive side, the Bentsen-Moynihan ammendment being considered would exempt the burning of wastes as fuel from any tax. A modification of this view is the Proxmire ammendment which would tax the receipt of wastes to be used as fuel with a rebate on proof that the hazardous wastes had been converted to inert, non-hazardous materials within a year. Either of these proposals would encourage the use of waste as fuel.

TAFT, STETTINIUS & HOLLISTER

ROBERT TAFT, JR.
JAMES D. WILLIAMS, JR.
RANDOLPH J. STAYIN
VIRGINIA E. HOPKINS
JOAN M. KOVALIC
ANN OTTOSON KING
DAVID L. DICK
BURTON R. THORMAN
A. RICHARD DEFELICE
OF COUNSEL

SUITE 800
1620 EYE STREET, N. W.
WASHINGTON, D. C. 20006
202-785-1620
CABLE TAFTHOL TWX 710-822-9501

CINCINNATI OFFICE
FIRST NATIONAL BANK CENTER
FOUNTAIN SQUARE
CINCINNATI, OHIO 45202
513-381-2838
COLUMBUS OFFICE
SUITE 1000 · 33 NORTH HIGH STREET
COLUMBUS, OHIO 43215
614-221-2838

April 30, 1985

Honorable Bob Packwood
259 Russell Senate Office Building
Washington, D.C. 20510

Re: S. 51-Superfund Legislation: Proposed Victim Assistance Program

Dear Bob:

I understand that the Senate Finance Committee has begun its deliberations on the Superfund legislation recently ordered reported by the Senate Committee on Environment and Public Works. It seems to me that Superfund does need to be reauthorized prior to the termination of the existing authority. Given the high costs associated with site cleanup, it would seem wise to develop legislation which confines the use of the fund to cleaning up existing hazardous waste sites.

The primary purpose of Superfund is to assist with the cleanup of abandoned or uncontrolled hazarous weste sites that threaten public health, welfare and the environment. EPA estimates that cleanup costs range between $7 billion and $22 billion, while the office of Technology Assessment estimates are between $50 billion and $100 billion. The financial underpinnings of this important national program should not be compromised by an additional financial requirement that may prove to be unbounded.

It is especially important that other issues not directly related to site cleanup be fully examined prior to authorization. An example of such a matter is the proposed five year victim assistance demonstration program which is authorized by section 129 of S. 51 as reported by the Senate Committee on Environment and Public Works. A proposal such as this could potentially result in a major financial program such as Black Lung or even national disability insurance. If Congress desires to create a medical assistance program for individuals who have been placed at increased risk of injury due to releases of hazardous substances, the large and potentially uncontrollable financial costs of such a program require that the issue be considered separately.

Previous experience with compensation funds has been that costs have escalated far beyond initial intent. For example, the black lung program was established in 1969 to compensate coal miners for a single disease (black lung) related to coal dust exposure. The program was originally designed as a "one-shot" program to terminate in 1976 at an estimated total cost of $350 million. Subsequent amendments expanded jurisdiction, increased the number of illnesses covered and made the program permanent. By 1981 the black lung program was paying benefits to some 460,000 individuals, more than twice the number of coal miners employed at that time. In addition, by 1981 black lung beneficiaries had received $11.5 billion in benefits, more than 30 times the initial cost projection.

Similarly, the Longshoreman's and Harbor Workers' fund, amended 10 times, grew from $43 million to $335 million--a 726 percent increase from 1972 to 1982. Based on conservative assumptions, a preliminary estimate of the cost of the Mitchell proposal, were it extended into a nationwide program, is about $2.5 billion a year.

It would be unfortunate if, in the face of escalating cleanup expenditures, limited resources were directed to other issues. Enclosed is an information package on this amendment. If you or your staff would like to discuss this further, please feel free to call me or Joan Kovalic of my office who is working with me on this matter.

Sincerely,

Robert Taft, Jr.

RTjr/Kakl
Enclosure

cc: John Colvin
Bill Diefenderfer
Mary Frances Pearson

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INFORMATION PACKAGE RE
THE VICTIM ASSISTANCE DEMONSTRATION PROGRAM, SEC. 129 OF THE SUPERFUND IMPROVEMENT ACT OF 1985, S. 51, AS REPORTED BY THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
S. Rep. 99-11, 99th Cong. 1st Sess., 48(1985)

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SUMMARY OF SEC. 129, SENATOR MITCHELL'S AMENDMENT TO S. 51 VICTIM ASSISTANCE DEMONSTRATION PROGRAM

On March 1, 1985, the Senate Environment and Public Works Committee reported out S. 51, The Superfund Improvement Act of 1985, with Sec. 129, the Victim Assistance Demonstration Program, which would amend Sec. 111(c) of CERCLA, the 1980 Superfund law.

Essential provisions are for grants of not less than $1 million nor more than $10 million each for not less than 5 nor more than 10 demonstration "areas," not to exceed $30 million each year for FYs 1986 and 1987, although the operating period for each program is three to five years. Funding for the program is from general revenues.

Eligibility is granted by the President and applied for by the states where areas are located, once those states report that the Agency for Toxic Substances and Disease Registry (established and already functioning under Sec. 104(i) of CERCLA) has completed its study which shows a population at significant risk of disease or injury associated by peer-reviewed studies ("using sound scientific and medical criteria") where individuals have been exposed "to a hazardous substance and release."

The President shall also take into account state and local experiences regulating "toxic chemicals and hazardous substances," the representative nature of the hazardous substance release and exposure in terms of characteristics (identification and toxic characteristics), exposure (manner and degree), method (scientific and medical methods to determine exposure), diseases or illnesses (seriousness and duration). This compensation is not available if a solvent responsible party pays compensation for claims or otherwise provides comparable medical assistance to an accepting party.

The program itself provides medical screening, examinations and tests for the population at risk; if there are no symptoms, a medical benefits insurance policy will provide reasonable costs for medical screening, testing or examination. If symptoms are present or individuals later develop symptoms, there shall be a reimbursement of out-of-pocket medical costs, "not recovered from any other private or public source." The bill also has a provision for a group medical benefits insurance policy, medical and surgical treatment and hospitalization which result from such a disease or injury, with an annual deductible of $500. These benefits are supposed to be secondary and non-duplicative of any other policies or coverage, private or public. Assistance under this program is conditional, in that if an individual pursues a claim against a potentially-responsible party and receives an award or settlement, the assistance received under the program is required to be paid back to the fund.

Two reports are required under the program: one from the President, beginning annually on January 1, 1987, on the effectiveness of the program and one evaluating the state programs, with a final report (not specified as to when) addressing the relationship of this program to other private and public mechanisms. Each state selecting to operate this program shall submit a report on the "implementation and effectiveness of its program" to the President and the Congress not later than Janaury 1, 1990.

POINT PAPER ON SENATOR MITCHELL'S AMENDMENT TO S. 51
VICTIM ASSISTANCE DEMONSTRATION PROGRAM

Senator George J. Mitchell (D-Me) has introduced an amendent to S. 51, the CERCLA reauthorization bill, that would provide grants totalling $30 million a year to states to reimburse individuals at risk from exposure to a hazardous release, for both unreimbursed medical costs and for future medical surveillance. The grants are intended to be a "demonstration" program in five or ten areas, selected during fiscal years 1986 and 1987, although payments from the grants would be made for three to five years.

The primary purpose of CERCLA is to assist with the cleanup of abandoned or uncontrolled hazardous waste sites that threaten public health, welfare and the environment. If Congress desires to create a medical assistance program for individuals who have been placed at increased risk of injury due to releases of hazardous substances, the large and potentially uncontrollable financial costs of such a program require that the issue be considered separately. Several estimates indicate that the costs to CERCLA for the cleanup of abandoned and uncontrolled hazardous waste sites alone will be very large. For example, EPA estimates these costs as ranging between $7 billion and $22 billion, while OTA estimates them at between $50 billion and $100 billion. The financial underpinnings of this important national program should not be compromised by an additional financial requirement that may prove to be unbounded.

This amendment is therefore not in the public interest because (1) it could easily lead to a national health program far beyond the intent of the original legislation; (2) there would be demands to spend more than the $60 million authorized in the amendment, possibly jeopardizing the hazardous waste clean-up function of CERCLA; (3) if the Mitchell proposal were extended into a full-scale program nationwide, it could cost as much as $2.5 billion a year; (4) the criteria by which Congress would judge whether the "demonstration" had succeeded are insufficient; (5) the problem of scientific causation is unsolved by the proposal; and (6) many provisions of the amendment are vague, leading to uncertainties and potential duplications in government programs.

(1) Because the amendment does not adequately define who is eligible for coverage in these "pilot" grants, individuals whose exposure to a hazardous substance is not associated with a waste site (someone who attended a school with asbestos insulation, for example) could receive benefits. In addition, because of the causation problem (see below), persons with a wide range of illnesses, coupled with any of a wide range of exposure, could be eligible. Such imprecision in eligibility standards would very likely lead to far more persons being eligible for benefits under the proposal than realistically would have

an illness caused by hazardous waste exposure. This could also lead to further attempts, in the interest of "fairness," to loosen eligibility requirements and broaden the benefits, potentially leading to a costly, burdensome national health program only tangentially related to hazardous releases.

(2) Even the benefits as defined in the amendment are likely to be far more costly than its sponsors intend. For example, lifetime medical surveillance costs for persons with no demonstrable injury amounted to more than $20,000 per person in the recent hazardous waste case of Ayers v. Jackson Township. And the number of people who will be able to establish eligibility through some "exposure" is likely to be quite large once benefits are established. Further, once any group of citizens have enjoyed a benefit under such a program, the political pressure to maintain or expand the benefit will be enormous, regardless of the program's merit. Previous experience with compensation funds has been that costs have escalated far beyond initial intent. For example, the black lung program was established in 1969 to compensate coal miners for a single disease (black lung) related to coal dust exposure. The program was originally designed as a "one-shot" program to terminate in 1976 at an estimated total cost of $350 million. Subsequent amendments expanded jurisdiction, increased the number of illnesses covered and made the program permanent. According to a 1980 report by the General Accounting Office, 88.5 percent of the claims approved for benefits did not contain adequate medical evidence to establish a coal miner's disability or death from black lung. By 1981 the black lung program was paying benefits to some 460,000 individuals, more than twice the number of coal miners employed at that time. In addition, by 1981 black lung beneficiaries had received $11.5 billion in benefits, more than 30 times the initial cost projection. Similarly, the Longshoreman's and Harbor Workers' fund, amended 10 times, grew from $43 million to $355 million -- a 726 percent increase from 1972 to 1982.

(3) Based on conservative assumptions, a preliminary estimate of the cost of the Mitchell proposal, were it extended into a nationwide program, is about $2.5 billion a year. This is based on medical treatment and assumed surveillance cost of $500 each for an average of 10,000 people per site at 500 sites (half the projected National Priorities list, halved again to represent those with no solvent responsible party). Medical treatment costs were based on national cancer statistics. There would be an average of about 30 cancers per site. This estimate assumes half of these would be eligible for the program's coverage, that 13 would have health insurance but would be compensated for the unreimbursed portion of their costs (probably 20%), and that 2 uninsured persons with cancer would be fully reimbursed. Using these conservative estimates, each site could cost some $5,046,000 per year, or a total, for 500 sites, of about $2.5 billion per year.

(4) The amendment does not set out clearly by what criteria the "demonstration" would be judged. By the number of applicants for the grant benefits? By incidence of illness "caused" by hazardous

releases? Is it a scientific standard? A politically defined one? Although billed as a pilot program, it more accurately appears to be the beginning, on a limited scale, of a far larger program.

(5) The legislation does not solve the problem of determining which cases of a particular illness, if any, are caused by exposure to a hazardous release. Nor does it distinguish between individuals whose exposure has been substantial and those whose exposure has been slight. The result is that for certain benefits, such as screening and testing -- in themselves very costly, large segments of the population are likely to be eligible, increasing pressure to expand the size and cost of the program.

(6) Some sections of the legislation could result in services that duplicate existing programs or that are unrelated to hazardous waste. The proposed program, for example, appears to duplicate Sec. 104(i) of CERCLA, which provides for an extensive information-gathering in order to demonstrate the scope of any problem of chronic illness caused by exposure to hazardous wastes. And under the Mitchell proposal, employees may be eligible for certain benefits for on-the-job exposures, in addition to Worker Compensation.

4/3/85

APPENDIX TO POINT PAPER ON SENATOR MITCHELL'S AMENDMENT TO S. 51, VICTIM ASSISTANCE DEMONSTRATION PROGRAM

This appendix provides an estimate of the potential economic impacts of the Mitchell amendment to S. 51, if this demonstration program were to be extended nationwide. As it is written, the economic costs of the program are intended to be no more than $30 million annually.

Two costs of the program appear to be especially significant: reimbursement of out-of-pocket medical costs and medical surveillance. These costs would be incurred only when the population living in an area could be shown to be at "significantly increased risk" due to the release of a hazardous substance, and no responsible party is paying compensation. If a responsible party were identified and made to pay compensation after the program had paid compensation, the program expenditures would be reimbursed.

In order to provide a rough cut at the potential costs, it is necessary first to estimate how many sites might be deemed eligible in the long run. To date, there is little evidence that hazardous wastes are creating a major health problem. How many sites could be deemed as placing the population at "significantly increased risk" is problematic. EPA has estimated that as many as 2,000 sites ultimately may be placed on the National Priorities List (others have provided even higher estimates). Assuming that half of the EPA-estimated number of sites may be deemed to pose significant health risks, and that of those half again will not have a responsible party who can pay for the costs of medical treatment and surveillance, some 500 sites would qualify for financing by such a program.

Based on EPA descriptions of the 786 current and proposed NPL sites, it appears that the average population at risk near these sites is approximately 10,000. Some sites potentially expose as many as 300,000 to 500,000 individuals, but most of these cases have multiple sites exposing the same population (e.g., Silicon Valley). Other sites potentially expose less than 200 individuals.

The cost of medical surveillance could be quite high. In the law suit Ayers v. Jackson Township, $7.8 million was awarded for the costs of future medical surveillance of a group of 350 individuals. This is some $20,000 per person (but it is intended to cover such costs for an extended period). As a conservative estimate, assume that adequate medical surveillance could be performed for a cost of $500 per person per year. In that case, for the average site, medical surveillance would cost $500 for each of 10,000 people, or some $5 million per year.

It is difficult to estimate the potential magnitude of out-of-pocket medical costs for diseases for which individuals had been placed at increased risk. Based on the best available information, there are few such diseases. But for the sake of argument, assume that half of all cancers will be deemed to qualify. About one person in every 300 contracts cancer each year (excluding skin cancers). This implies that about 30 cancers would occur annually near the average site, half of which might qualify. Some 85 percent of the population has health coverage. Thus 15 percent of 15 cases, or just over two near the average site would be covered fully under a Mitchell-type plan. At an assumed average cost of treatment of $10,000, this would amount to $20,000 per year for the average site. In addition, each of the 13 other individuals would qualify for reimbursement of the portion of expenses not covered by insurance, generally about 20 percent. This would amount to an additional $26,000 per year for the average site.

Aggregating these conservative estimates, one finds that an average site might cost some $5,046,000 per year. For 500 sites, this would be some $2.5 billion per year.

4/1/85

QUESTIONS CONCERNING SEC. 129, SENATOR MITCHELL'S AMENDMENT TO S. 51 VICTIM ASSISTANCE DEMONSTRATION PROGRAM

1. What specifically is the program seeking to demonstrate? By what criteria would the utility and effectiveness be judged?

2. Is this proposed program essentially the same as Sec. 104(i) of CERCLA which provides for extensive information-gathering (reports, literature, areas closed to the public, etc.) that can "demonstrate" the scope of any alleged problem? Doesn't the provided medical assistance program duplicate the medical services already available from the Public Health Service under Superfund Sec. 104(i)(4) and (5), including screening and hospital care?

3. What are the estimated costs and staffing requirements for both EPA and the states to administer the proposed demonstration program? Are these costs in addition to the $30 million annually? What would be the start-up time to adopt implementing regulations, hire necessary staffs, complete the necessary health criteria studies, etc., to fully activate a demonstration program? Can these large start-up costs be justified for a program which may run only a year or two?

4. What is the difference between an "area" and a state for purposes of selection and funding? If one state demonstrates that a certain "area" is located in two states, which state is eligible or can both apply, thereby creating potentially 10 to 20 programs with immediate pressure for more funding?

5. Because the program appears to be designed to be non-duplicative, will there be an incentive for persons to terminate any health and insurance programs that they presently have? How will the "30 days prior" requirement be enforced and audited?

6. Once such a program has been activated, how long must it run in order to demonstrate whatever it is that the program proposes to "demonstrate?" How do these considerations interrelate with an annual budget of only $30 million per year? More specifically, how can we plan and budget for the initiation of new programs in the second and third years when the five to ten programs started in the initial year will probably require more than one year to staff and implement and more than one year to adequately test and "demonstrate?" (For example, if the first five to ten programs, with normal growth, required an aggregate of $30 million a year, how can we realistically plan to fund successor programs in subsequent years during the reauthorization cycle?)

7. Can the states, at federal expense, add benefits to the program (e.g., genetics screening and psychological counseling)?

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8. Will qualified claimants be turned down once the annual budget for a program has been expended for a particular year? Medical expenses for a particular disease or injury may well run for many years; will claimants receiving compensation under the program have these payments abruptly cut off when the demonstration program is concluded?

9. If adequate budget funds are not available to compensate all available claimants in a demonstration year, what criteria will be utilized to determine which claimants will be paid and which will not? Can a person with a disease or injury residing in an area outside the demonstration project, but who previously lived and experienced exposure within the demonstration area, move back and be eligible to receive compensation?

10. Are the criteria for claimants' eligibility under this program more liberal or more strict than the criteria under the Black Lung program?

11. Why hasn't the demonstration project been limited to claimants who can establish an exposure to a hazardous waste from an abandoned waste site or that portion of a hazardous waste site for which no solvent responsible party can be identified? Does the program cover municipal or federal sites?

12. What is the conceptual difference between "association," increased risk, "due to exposure" and causation?

13. Does a claimant have to show simply that there was an exposure and that the symptoms are associated with a disease, rather than that the disease was caused by that exposure, in order to obtain reimbursement of past medical costs and insurance for future medical costs?

14. Won't the Victim Assistance Demonstration Program be used to compensate persons claiming injury from all environmental exposures, as well as workplace and consumer exposures, because:

    (a) "Release" of a "hazardous substance" is not required to be from a "facility" as required by CERCLA today;

    (b) Current and retired workers, such as shipyard, refining, chemical or construction workers, who are exposed to asbestos or other hazardous substances in the workplace, could claim eligibility for medical testing, screening and evaluation, which are not traditionally covered by workers' compensation; and

(c) Certain consumer products, such as asbestos, solvents and lead in paint, might be "released" into the immediate environment of the worker or consumer?

15. Once it is established, could that part of the program which does not require "exposure to a hazardous substance from a release," in order to provide screening, examination and testing, a group medical benefits policy and reimbursement of out-of-pocket costs, cover persons exposed to the indoor environment (e.g., asbestos in schools and formaldehyde in homes or tailpipe emissions from cars, trains, boats and planes)?

16. Is the insurance industry prepared to make available the type of "group medical benefits policy" contemplated by the demonstration program? If so, what would be the cost of such a policy?

17. How does a completely uncapped program of medical expense reimbursement fit in with current efforts in both government and industry to contain runaway medical expenses?

18. What amount of staffing and claims investigation costs will be required to insure that payments under the demonstration program are not duplicative of benefits received by the claimant under other programs?

19. What administrative and enforcement mechanism would be required to avoid fraud and duplicative payments? How large a staff and how costly will these controls be?

20. Will the Victim Assistance Demonstration Program result in increased litigation and transaction costs and potential cleanup delays as states or the fund seek reimbursement from responsible parties pursuant to Sec. 112(c) of CERCLA?

March 29, 1985

TEXT OF SEC. 129, SENATOR MITCHELL'S AMENDMENT TO S. 51
VICTIM ASSISTANCE DEMONSTRATION PROGRAM

VICTIM ASSISTANCE DEMONSTRATION PROGRAM

SEC. 129. (a) Section 111(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 is amended by striking "and" at the end of the paragraph (5); by striking the period at the end of paragraph (6) and inserting in lieu thereof "; and"; and by adding the following new paragraph:

"(7) the costs of grants under subsection (m), not to exceed a total of $30,000,000 per fiscal year, to be provided out of funds received by the Trust Fund under section 303(b).".

(b) Section 111 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 is amended by adding the following new subsection:

"(m)(1) In the case of any geographic area (as identified by the Agency for Toxic Substances and Disease Registry) for which a health assessment or other health study performed under section 104(i) indicates that—

"(A) there is a disease or injury for which the population of such area is placed at significantly increased risk as a result of a release of a hazardous substance;

"(B) such disease or injury has been demonstrated by peer reviewed studies to be associated (using sound scientific and medical criteria) with exposure to a hazardous substance; and

"(C) the geographical area contains individuals within the population who have been exposed to a hazardous substance in a release,

the State in which such area is located may apply to the Administrator of the Environmental Protection Agency to operate an experimental demonstration assistance program under this subsection.

"(2) From areas nominated under paragraph (1) the President shall select, during each of fiscal years 1986 and 1987, no less than five or more than ten areas for demonstration assistance programs under this subsection. Such selections shall be made in the discretion of the President, taking into account—

"(A) the experience of State and local governments in administering programs which deal with the regulation of toxic chemicals and hazardous substances; and

"(B) the representative nature of the hazardous substance releases and exposures in terms of the identities and toxic characteristics of the substances found, the manner and degree of exposure, the scientific and

medical method used to determine such exposure, and the seriousness and duration of the diseases or illnesses caused.

"(3) For each area selected under paragraph (2) the State shall establish and operate for a period of not less than three years or more than five years a program of medical assistance to individuals who, according to health assessments or other studies done under section 104(i) have been placed at significantly increased risk of disease or injury due to exposure to a hazardous substance from a release. The President shall make a grant for each such area in an amount of not less than $1,000,000 nor more than $10,000,000 per fiscal year (and a total for all such grants of not more than $30,000,000 per fiscal year), but in no event shall grants be made in fewer than five States.

"(4) Programs funded pursuant to this subsection shall not provide assistance in the case of any area or class of individuals in which a solvent responsible party who may be liable under section 107 is paying compensation for claims or otherwise providing medical assistance, comparable (though not necessarily identical in scope or duration) to assistance under this subsection. If a party has accepted liability for such claims or assistance, no assistance shall be available under this subsection even though the party may not have

commenced assistance at the time of an application by a State.

"(5) A program established and operated under this subsection shall provide the following assistance:

"(A) appropriate medical screening, examination and testing (in accordance with sound medical procedures) as necessary to determine the presence in individuals of the disease or injury for which the population of the geographic area is at significantly increased risk;

"(B) for individuals with no present symptoms of such disease or injury, a group medical benefits policy providing the reasonable costs of periodic medical screening, testing or examination (in accordance with sound medical procedures), as necessary to determine the presence of such symptoms; and

"(C) for individuals with present symptoms of such disease or injury (or who develop such symptoms)—

"(i) reimbursement of the out-of-pocket costs of related medical expenses in connection with such disease or injury previously incurred and not recovered from any other public or private source, and

"(ii) a group medical benefits insurance policy providing the reasonable costs of sound medical and surgical treatment and hospitalization resulting from such disease or injury (which according to health assessments or other health studies under section 104(i), is associated with exposure to a hazardous substance in a release in the geographical area). Such a policy shall be subject to an annual deductible of $500, with no copayment requirement or annual or lifetime limitation on expenditures other than those referred to in paragraph (3).

"(D) Such policies provided under subparagraphs (B) and (C) shall be secondary to, and provide for nonduplication of benefits with, any other policy or coverage, public or private, for which such individual is eligible. The benefits or coverage of such other policy shall be those determined to be in force as of thirty days prior to the date the State applies for area designation.

"(E) Assistance under this subsection shall be provided on the condition that the costs thereof in connection with any individual pursuing a claim against a potentially responsible party shall be repaid to the

Fund out of the proceeds of any award (including punitive damages) or settlement of such claim.

"(6)(A) The President, with the assistance of the Agency for Toxic Substances and Disease Registry, beginning January 1, 1987, shall submit annual reports to the Congress on the implementation and effectiveness of this victim assistance demonstration program, including an evaluation of the effectiveness of each of the State programs established under the subsection. The final report shall also address the relationship of this demonstration program to other public and private mechanisms that may exist to carry out the same or similar functions.

"(B) Each State selected to operate a demonstration program under this subsection shall submit to the President and the Congress, not later than January 1, 1990, a report on the implementation and effectiveness of its program.".

Report No. 85-81 E

PROPOSED SUPERFUND TAX INCREASES AND THE U.S. PETROCHEMICAL INDUSTRY: AN ECONOMIC ANALYSIS

by
Salvatore Lazzari
Analyst in Public Finance
and
Bernard A. Gelb
Analyst in Industry Economics

ABSTRACT

This report analyzes the expected economic impact of hypothesized large increases in Superfund taxes on the U.S. petrochemical industry. In general, it finds that the hypothesized tax increases would raise average production costs of six major primary petrochemicals by 3 to 5 percent, and that the resulting decline in industry profitability in the long-run would lead to a reduction in output and employment and to an increase in prices.

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PROPOSED SUPERFUND TAX INCREASES AND THE U.S. PETROCHEMICAL INDUSTRY: AN ECONOMIC ANALYSIS

I. INTRODUCTION AND SUMMARY

A. Background

On December 11, 1980, the Federal Government enacted the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) 1/ to authorize the expenditure of money for cleaning existing hazardous waste sites and to avert the threat of releasing new hazardous waste substances. This program, also known as Superfund, is largely financed by a system of excise taxes on 42 chemicals and on petroleum. In addition, a small proportion of the Superfund's revenues is appropriated from general tax revenues, and still smaller shares are obtained from other revenue sources.

Unless the Act is extended, the tax-collecting authority will expire at the end of fiscal 1985. Various committees in the House and Senate are considering bills to extend and modify it. At this writing, two bills in the 99th Congress call for a large increase in the size of the Superfund, to be financed mainly by much higher taxes on the chemicals and petroleum covered by the present law. S. 51 (Stafford) would expand ther Superfund program from $1.6 billion (over the five-year period) to $7.5 billion (over the next five-year period). H.R. 2022 (Sikorski) would expand the program to $11.7 billion

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1/ Public Law 96-510.

over a similar period). The latter is similar in dollar magnitude to H.R. 5640 passed by the House, but not the Senate, in the 98th Congress. 2/

B. Purpose and Scope of Report

The purpose of this report is to analyze the economic impact of large increases in Superfund taxes on the U.S. petrochemical industry. Section I.A. reviews the present structure of Superfund taxation and I.B. describes in greater detail than above, the proposed expansion of such taxation under H.R. 5640 as approved by the House in the 98th Congress. H.R. 5640 was selected because it provides for large tax increases and because a comparable bill had not been introduced in the 99th Congress until the analysis was nearly complete.

Section II describes the role of petrochemicals in the economy and recent industry trends. Section III addresses some of the economic issues, such as where the burden of the proposed tax increases is likely to fall, the potential effects on the industry's profitability and size, and the potential effects on the ability of the U.S. petrochemical industry to compete against foreign producers. The analysis focuses mainly on producers of six major primary petrochemicals. To the extent that other proposals are similar to H.R. 5640, the analysis probably will apply to those proposals as well.

The report concerns itself only with the tax provisions of the existing Superfund program reauthorization as passed by the House in the 98th Congress.

2/ It should be noted that a variety of funding options are being considered in the present debate: The Reagan Administration proposed a 5-year reauthorization which would raise $5.3 billion in part from a new waste-end tax; S. 51, introduced by Senator Stafford, is a $7.5 billion reauthorization which proposes a new waste-end tax, increased petroleum and feedstock taxes, and a surtax on corporate income; some industry proposals call for a value-added tax on manufacturing; Senator Bradley's S. 596 which provides for a continuation of present taxes would continue present taxes and impose taxes on hazardous wastes and on net receipts of corporations.

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There is no discussion of the expenditure side of the Superfund program, of the goals or objectives of the program, or of environmental policy in general.

C. Summary of Findings

A previous CRS study on the effects of present Superfund taxation on petrochemicals found that the tax rates are too low to explain the recent poor industry performance relative to the long-term trend before the 1980s. 3/ Tax increases of the size proposed in H.R. 5640 (98th Congress), however, would probably have a noticeable effect on the industry.

In general, we find that the proposed tax rates would raise the production costs of six major primary petrochemicals by 3 to 5 percent, and that the resulting decline in industry profitability in the long run would lead to a reduction in output and employment and to an increase in prices of primary petrochemicals.

It is difficult to estimate the magnitude of these impacts and the distribution of the effects upon different parts of the industry; and it is uncertain as to what would be the path of adjustment to the ultimate long-term outcome. The general long term results would depend mainly upon assumptions concerning the price elasticities of supply and demand for the primary chemicals. The short and medium term results would depend upon consumptions concerning industry structure, and the responses to the tax by the various buyers and sellers in the petrochemical market.

In the short run, domestic primary petrochemical producers and foreign suppliers probably would raise prices at least to some extent to cover the

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3/ U.S. Library of Congress. Congressional Research Service. U.S. Primary Petrochemicals: The Superfund Taxes and Other Factors Shaping Recent Trends in Supply and Demand. Report No. 84-704E, by Bernard A. Gelb and Gary L. Guenther. Washington, 1984.

increase in costs represented by the proposed tax boosts. (a) Profit margins of domestic producers may not be large enough to absorb the proposed tax increase. (b) Imported products would also be faced with potential large decreases in profits. (c) The domestic intermediate petrochemical industry (users of the primary products) is composed of more firms and, therefore, may be more competitive than the primary petrochemical industry. Demand for and production of primary petrochemicals would decrease.

It is alternatively possible in the short run, but not likely, that (a) domestic producers individually will not raise prices in fear that other domestic producers and foreign suppliers will not follow suit, and (b), if foreign producers have wider profit margins than their domestic counterparts, the former would absorb much or all of the tax increaseand raise prices very little or not at all. Depending upon domestic producurs' profit margins, this could result in large operating losses in the short run.

In either short-run scenario, the long-run effect would be that the drop in profits (or incurrence of losses) would reduce (or eliminate) the rate of return to capital, and resources would leave the U.S. primary petrochemical industry. Domestic industry output and employment would decrease. And, aside from the direct effects of the tax increase, a smaller U.S. industry and greater demand for foreign products would tend to result in higher prices and more imports.

The domestic intermediate petrochemical industry will bear the burden of the proposed tax increases to the extent that primary producers shift the tax forward. They would not be able to shift the higher costs forward to their buyers, who have the option of buying imported intermediate products (which would be subject to Superfund taxes under H.R. 5640).

Because H.R. 5640 would increase Superfund taxes on crude oil, the U.S. petroleum refining industry, too, would experience increases in production costs. Moreover, the several integrated oil companies (with petroluem refining divisions) that also produce taxable primary petrochemicals would be subject to higher Superfund taxation on the costs of both their inputs (crude oil) and on some of their outputs of primary petrochemicals. Given the present low profitability of the refinery industry in the United States, and the competitive nature of the world oil market, this may produce additional hardships. Some of these problems may spill over to oil producers.

In general, the findings of our analysis imply that part of the cost of cleaning up the environment consists of the economic costs of reduced industry profits, output, and employment. These costs should be part of the debate over environmental policy.

II. PRESENT LAW AND PROPOSED CHANGES

A. The 1980 Act

The present Superfund program is funded largely by a system of excise taxes on 42 chemical substances and crude oil. In fiscal year 1983, the revenues generated by these taxes — $230 million — accounted for about 70 percent of total receipts of the Superfund program. In addition, Superfund monies came from general revenues (about 12 percent in Fiscal Year 1982), interest income (about 18 percent in FY 1982), and a tax on hazardous wastes received by a qualified disposal facility (about two percent in 1982). Authority to collect the taxes expires on September 30, 1985.

1. The Chemical Taxes.

The 1980 Act imposes a system of excise taxes on designated chemical substances, produced or used domestically, that are considered to be hazardous or (even if the taxable chemical is not inherently hazardous) that may be used in any production process that results in hazardous waste products. These taxes — often referred to as the feedstock taxes — are imposed on the use or on the sale of the designated chemicals. Thus, a substance need not be sold to be taxed. Where a taxable substance is used as an input into the production of another taxable substance, the amount of tax on the input substance is credited against the tax on the output substance. Imports are also subject to the tax, and there is, under present law, no rebate of the tax on exports.

Twelve primary petrochemicals and 30 inorganic chemicals constitute the designated chemical substances. 4/ The rate of taxation is relatively low, ranging from 22 cents per ton for potassium hydroxide (an inorganic chemical) to $4.87 per ton on ten of the petrochemicals.

Under certain conditions, the designated substances may be exempt from the Superfund tax. The five following categories of chemicals are exempted because of their particular origin and/or purpose. (Some of the exemptions were added by the Deficit Reduction Act of 1984.) 5/

* Chemical substances derived from coal;

* Certain chemicals used as fuels or used in the manufacture of motor fuel, diesel fuel, aviation fuel, or jet fuel (this applies to all of the petrochemicals except ammonia);

* Chemicals used to produce fertilizer (includes ammonia, methane used to produce ammonia, nitric acid and sulfuric acid);

* Sulfuric acid that is a byproduct of air pollution control equipment;

* Certain substances that may be produced as temporary byproducts of a metal refining process and may be incidental to that process, as long as they are not removed (this applies to lead oxide, zinc sulfate, zinc chloride, cupric oxide, cuprous oxide, and cupric sulfate).

4/ The indicated 12 petrochemicals includes ammonia, virtually all of which is produced from natural gas. The 1980 Act follows usual practice and lists ammonia among the inorganics, because it contains no carbon.

5/ P.L. 98-369.

2. The Petroleum Tax.

The second Superfund excise tax is a relatively minor tax of 0.79 cents ($.0079) on each barrel of crude oil received by a domestic refiner and on each barrel of petroleum products imported into the United States. In the case of domestic crude oil, the tax is imposed on the operation of the refinery that is receiving the oil. In the case of imported petroleum products, the tax is imposed on the person bringing the product(s) into the country. In situations where the crude oil is used or exported before the tax is imposed, the tax is levied on the user or exporter of the oil.

Taxable crude oil includes crude oil condensates and natural gasoline, nearly all of which is extracted from natural gas. Taxable imported petroleum products are defined as any hydrocarbon product derived from crude oil or natural gasoline that is imported in liquid form into the United States (this includes crude oil, oil condensate, natural and refined gasoline, and other products refined from crude oil).

There are several categories of hydrocarbon liquids that are explicitly exempted from the petroleum tax or, through omission in the statute, not subject to the tax:

- Crude oil used to extract oil or natural gas, such as an injectant in a tertiary recovery process, on the premises where the crude oil was produced;
- Natural gas liquids other than natural gasoline;
- Synthetically produced oil such as oil from shale rock, tar sands, biomass, and coal;
- Refined petroleum products that were produced in U. S. refineries.

3. Tax at Waste Disposal Facilities.

CERCLA also imposes a tax (effective October 1, 1983) of $2.13 per ton on hazardous wastes delivered to a permitted waste disposal facility. The revenues from this tax finance the Post-Closure Liability Trust Fund. The Fund assumes the liability of hazardous waste disposal facilities when they have been closed (in accordance with regulations) and have been monitored for up to five years to show there is no substantial likelihood of release of hazardous substances.

B. The House-Passed Bill (H.R. 5640, 98th Congress)

H.R. 5640 was a comprehensive Superfund reauthorization and reform bill. It would have increased tax rates and widened the scope of Superfund excise taxes, strengthened Federal enforcement and encouragement of pollution control activities in a variety of ways, and enhanced Federal ability to respond to hazardous waste occurrences and to assist victims of such occurrences.

1. The Chemical Tax.

The House-passed bill would have changed the taxes on chemicals in several ways. First, the number of substances subject to a Superfund tax would have been expanded from 42 to 56, with most of the additions coming from the inclusion of some coal-derived chemicals and of several elemental metals and metal compounds not previously taxable. One inorganic chemical -- lead oxide -- would have been deleted from the list of chemicals that are presently subject to tax.

Second, the bill would have increased the chemical taxes several fold: in some cases, all at once in 1985, in other cases, by varying increments to be phased in over a five-year period. The tax rates would increase further if a waste-end tax is not enacted. For example, the highest present tax rate is $4.87 per ton (which applies to 10 of the 12 petrochemicals). Under H.R. 5640, the highest rate would have increased to $30 per ton with a waste-end tax and to $35 per ton without a waste-end tax.

Third, the amounts of tax imposed would have been subject to an inflation adjustment in each year. The tax payable on each chemical in a given calendar year would have been adjusted by any percent increase in the producer price index for basic organic chemicals or basic inorganic chemicals (as appropriate) between 1984 and the average for the 12 months ending on September 30 of the previous calendar year. No provision was made for adjusting the tax for price decreases.

Fourth, the bill would make several other changes regarding exemptions from the chemical taxes. Perhaps most important, exports of otherwise taxable substances would be exempt, and the blanket exemption of coal-derived chemicals would be removed.

In nearly all cases, the changes would have become effective January 1, 1985; the bill did not specify a termination date for the chemical taxes.

(2) The Petroleum Tax.

H.R. 5640 would have increased the tax on petroleum from 0.79 cents per barrel to 7.86 cents per barrel, effective January 1, 1985. If a waste-end tax were not enacted before July 1, 1986, the tax on petroleum would have been increased to 9.65 cents per barrel on January 1, 1987. This tax (at either level) would remain in effect through September 30, 1990. No change would have been made in the categories of petroleum subject to the tax.

(3) Proposed Waste-End Tax.

In effect, H.R. 5640 envisioned but did not mandate a waste-end tax. The bill would require the Secretary of the Treasury, in consultation with the Environmental Protection Agency and the International Trade Commission, to study various proposals for such a tax and their probable trade and other economic effects in order to develop a proposal for an excise tax on the disposal of hazardous substances. That proposal was to be designed to discourage, with maximum administrative feasibility, the disposal of hazardous wastes in environmentally unsound ways.

A report on the study and a legislative proposal for a Federal waste-end tax would have been submitted to Congress no later than April 1, 1985.

H.R. 5640 also would have repealed the present tax on disposal of hazardous waste through licensed facilities and the Post-Closure Liability Trust Fund, into which the waste-disposal taxes were deposited.

IV. BACKGROUND ON PETROCHEMICALS AND THE EFFECTS OF PRESENT SUPERFUND TAXES

As their name implies, petrochemicals are derived from petroleum and natural gas, in the form of petroleum liquids, natural gas liquids, and gases. Four chemicals that are identical in structure to four primary petrochemicals (benzene, naphthalene, toluene, and xylene) are also derived from coal tar and tar crudes, but in relatively small quantities. They constitute the materials from which plastics, synthetic fibers, synthetic rubber, most fertilizers and pesticides, numerous drugs, and many other products are made.

Primary petrochemicals are the initial direct chemical derivatives of those hydrocarbons. They are further processed into intermediate petrochemicals; these, in turn, are processed into petrochemical products, which are sold to a wide range of industries for further processing and incorporation into products for industrial, commercial, or household use. Industry, agriculture, and commerce use petroleum-derived items such as surfactants, pesticides, and detergents. Ultimately, petrochemicals are used, directly and indirectly, in the production of a large number of durable and nondurable consumer goods ranging from food, beverage containers, and cosmetics, to automobiles, home appliances, and furniture.

In 1984, U.S. production of primary petrochemicals totalled about 120 billion pounds; and, "true" petrochemicals accounted for 99 percent of U.S. output of primary petrochemicals plus their coal-derived counterparts.

During the two decades before 1979, production of petrochemicals by U.S. producers rose rapidly, as the ultimate products derived from petrochemicals replaced natural materials such as cotton, wood, rubber, metals, soap, manure, and natural solvents. The economic competitiveness of petrochemicals was enhanced by rapid technological advances in production processes and by stable prices of feedstocks and fuel. Production by the Industrial Organic Chemicals Industry — the industry that produces all primary and most intermediate petrochemicals — increased at an average annual rate of 10 percent between 1954 and 1967, and 7 percent between 1967 and 1979.

In sharp contrast to its rapid growth during the 1960s and 1970s, the U.S. petrochemical industry — especially producers of primary petrochemicals — has been in decline during most of the period since 1979. Production, employment, and operating rates were all notably lower in 1983 than in 1979. Profits appear to be down substantially as well. At the same time, the share of the U.S. market accounted for by imports has grown markedly.

Several major factors underlie this decline, according to a recent CRS analysis. 5/ While the imposition of Superfund excise taxes on chemicals and petroleum about the time when the industry began to have difficulties did not help the industry, the tax levels are low enough so that their effects probably were very small compared with the other negative factors. Moreover, the Economic Recovery Tax Act of 1981 (P.L. 97-34) substantially reduced the burden of corporate income taxes on U.S. corporations, including the petrochemical industry.

5/ See U.S. Library of Congress. Congressional Research Service. U.S. Primary Petrochemicals; The Superfund Taxes and Other Factors Shaping Recent Trends In Supply and Demand. Report No. 84-704E by Bernard A. Gelb and Gary L. Guenther, August 30, 1984. Washington, 1984.

A recent study by the Envirnomental Protection Agency makes similar findings concerning the trade effect of present Superfund taxes: "Global recession, decontrol of U.S. crude oil prices, changes in exchange rates, and increase in foreign chemical production capacity overwhelm any potential effects of the excise taxes imposed by CERCLA on the U.S. balance of trade." 6/ The study concluded that the effect of the law's excise tax on the trade deficit was probably not significant because both imported and domestically produced feedstock are taxed.

6/ U.S. Environmental Protection Agency. Impact of the CERCLA Tax on the Nation's Balance of Trade, CERCLA Sec. 301 (A)(1)(F). December 1984. Washington, 1984.

IV. ECONOMIC ANALYSIS

A. Focus of the Analysis

This analysis focuses on six of the twelve primary petrochemicals that are subject to Superfund taxes, and on the producers of those substances. The six petrochemicals — benzene, butadiene, ethylene, propylene, toluene, and xylene — accounted for about 60 percent of U.S. production of primary petrochemicals in 1984. Between June 1981 and September 1982, 89 percent of Superfund tax receipts from primary petrochemicals and about 60 percent of all Superfund tax receipts were accounted for by the six chemicals.

Existing law imposes exactly the same absolute tax on each of the six substances: $4.87 per ton. 7/ We have assumed that the tax for each of the chemicals rises from the present level to those specified by H.R. 5640 for 1987 and 1990, under a scenario of no waste-end tax (table 1). H.R. 5640 contained two sets of tax schedules that would raise the taxes, in step fashion, over five years, to as high as $26.11 per ton. (One set assumed eventual imposition of a waste-end tax; the other did not.) The rates of change and amounts were completely different for each of the six substances. With only one exception (among the six), taxes per ton would be higher in every year in the scenario with no waste-end tax. It should be noted that, also with one exception, the

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7/ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (P.L. 96-510)

TABLE 1. Estimated Prices and Hypothesized Superfund Tax Rates
for Six Primary Petrochemicals
(dollars per ton)

Petrochemical	Estimated Price a/	Tax		
		Existing	1987	1990
Benzene	$ 320	$ 4.87	$ 13.20	$ 17.60
Butadiene b/	590	4.87	19.58	26.11
Ethylene	310	4.87	13.78	18.37
Propylene c/	315	4.87	11.74	15.65
Toluene	290	4.87	10.38	13.84
Xylene	275	4.87	21.30	22.35

a/ Average price as of early 1985.

b/ 1,3-Butadiene.

c/ Chemical grade.

Sources: CRS estimates, based on data provided by Chemical Marketing Associates, Inc.; P.L. 96-510; H.R. 5640, as passed by the House of Representatives, 98th Congress.

tax amounts for 1990 under the no waste-end tax case are one-third higher than those for 1987.

Economic analysis of the impact of the hypothesized Superfund tax increase requires knowledge of the prices of the commodities. We have estimated average current prices for each of the six substances, largely on the basis of price data made available to CRS by Chemical Marketing Associates, Inc. (Houston, Texas). These, also, are shown in table 1.

B. Questions of Market Structure and Behavior

The economic effects of increases in Superfund taxes on the U.S. petrochemical industry would depend upon the structure of the primary petrochemical industry, the role of foreign suppliers (also sellers), and the structure of the intermediate chemical industry (the buyers). Additionally, the economic effects would depend on the type of competitive behavior of the sellers and buyers, and on the relative reaction of each to tax increases. Analysis is complicated, particularly in the short run, by uncertainty as to what analytical framework (in terms of market structure and seller and buyer behavior) would be appropriate.

The structure of the U.S. primary petrochemical industry seems to be characterized by relatively few producers of a homogeneous product. Producers tend to be large chemical companies or major integrated oil companies. In the cases of benzene and ethylene, for example, the largest ten producers account for 63 percent and 77 percent, respectively, of total U.S. production capacity for the two substances. The top four producers account for 30 percent and 42 percent of the respective capacity totals. (See table 2.)

An industry with such a structure often is characterized by interdependence among firms, where each firm's pricing and other decisions tend to depend

TABLE 2. Annual Production Capacity Among Top Ten Producers of Ethylene And Benzene

ETHYLENE

Producer	Thousand Metric Tons	% of Total
Shell	2,336	13.7%
Dow	1,818	10.7
Union Carbide	1,764	10.3
Arco	1,271	7.5
Exxon	1,180	6.9
Gulf	1,162	6.8
Dupont	1,057	6.2
Amoco	973	5.7
Phillips	972	5.7
Texaco	620	3.6
Subtotal	13.155	77.1%
Total U.S.	17,073	100.0%

BENZENE

Producer	Thousand Metric Gallons	% of Total
Gulf	205	8.9%
Shell	174	7.5
Exxon	168	7.3
Phillips a/	142	6.1
Sun	133	5.8
Dow	130	5.6
Sohio	115	5.0
Arco	111	4.8
DuPont	100	4.3
Amoco	95	4.1
Ashland	75	3.2
Subtotal	1,448	63.0%
Total U.S.	2,312	100.0%

a/ Includes plants in Puerto Rico

Sources: Chemical Week, August 29, 1984, pp. 46-47; Oil & Gas Journal, September 3, 1984, pp. 55-56.

upon how the firm anticipates its competitors will react. Accordingly, the economic effects of expanded Superfund taxation would depend upon how the various producers would react to the higher taxes and what they believe would be the reaction of their competitors including foreign competitors.

If there is such interdependence, prices tend to be more stable than they would be otherwise under pressure of cost increases. 8/ Sellers fear that a price increase on their part will not be adopted by competitors, which would result in the price-booster losing market share. Thus, competitors view market share as an important goal in itself, and are willing to reduce profit margins to maintain or increase their share. Other things being equal, this kind of competitive behavior makes it unlikely that the companies will attempt to raise their prices (in order to shift some or all of a tax increase to the buyers. This "model" is appropriate if production costs do not vary widely among the various sellers.

It is not clear from movements in the prices of the six petrochemicals over the last five years that there has recently been or is now interdependence among sellers in the U.S. primary petrochemical market. Prices of the six substances have fluctuated considerably since early 1979. For example, the price of benzene increased about 25 percent between the third quarter of 1980 and the second quarter of 1981; and the price of ethylene fell 30 percent between June 1984 and March 1985. These observations are based on (a) monthly and quarterly average transaction prices of U.S. producers for 1980 through early 1985, made available to CRS by Chemical Marketing Associates, Inc.

8/ An excise tax on a producer is essentially equivalent to an increase in production costs.

(Houston, Texas), and (b) monthly producer price indexes completed by the U.S. Bureau of Labor Statistics. 9/

These fluctuations may not necessarily rule out a condition of interdependence, however. First, it is common for the prices of homogeneous, commodity-type products such as primary petrochemicals to vary widely over phases of the business cycle; and the chemical industry experienced two recessions and recoveries during this period. Second, prices of crude oil and natural gas — the raw materials of these products — increased very steeply and, in the case of oil, then declined significantly.

Third, because some of these products are co-products or by-products in the process of producing others, swings in demand for the primarily intended product and in its production can result in shortfalls or excess supplies of co-products for which there are no similar swings in demand. Other things being equal, the shortfalls, or surpluses, will tend to raise, or reduce, prices of the co-products. Fourth, there may be an interdependence among domestic producers only, with foreign suppliers tending to set prices below what domestic producers would charge.

The circumstances described in the fourth item may well describe the situation now, although not uniformly for all six products. There is an indication that import prices are lower than domestic producers' prices for 4 of the 6 primary petrochemical substances. 10/ Where foreign suppliers are charging prices lower than what domestic producers would charge, the latter —

9/ Chemical Marketing Associates provided contract prices for all six chemicals, except toluene, where spot prices were provided. The Bureau of Labor Statistics does not compile a price index for xylene.

10/ Average prices of imports were derived by dividing the total value by total quantity of imports for each of the products. Average domestic prices were calculated from the data provided by Chemical Marketing Associates, Inc.

assuming they still pursue the same corporate goals — must keep prices as low as possible to avoid losing still more market share. There is nothing inherent in this situation, however, that predicts the reaction of foreign suppliers when a large tax increase is imposed.

Returning to the industry structure described initially, one can very reasonably also infer a mode of behavior different from that developed above. Ofter things being equal, a relatively small number of producers under cost pressure may well be able to raise prices. For example, producers of benzene were able to boost prices about 30 percent between 1979 and 1980 to cover (at least partly) the increase in the cost of crude oil even though production (and presumably demand) dropped about 25 percent. Over the same period, prices of propylene rose even faster (55 percent) in the face of a smaller drop in output (4 percent).

Domestic producers' ability to raise prices would be eased by the nature of demand for their products. Buyers, intermediate petrochemical producers, far outnumber the sellers, and thus constitute a more competitive industry than the primary petrochemical industry. In addition, substitution possibilities for primary petrochemicals are technologically limited in some cases, at least in the short run; demand for these substances is therefore likely to be price inelastic.

Finally, because imported primary petrochemicals would also be subject to tax increases under H.R. 5640, foreign producers selling in the U.S. market would have an incentive to increase prices, and would do so roughly to the extent that U.S. producers raise their prices. 11/ Those foreign producers who, because of lower production costs or pressure of low capacity utilization undersell U.S.

11/ This does not imply that U.S. producers would be the first to increase prices.

producers, presumably would not increase prices so far as to close the gap. It is possible that foreign producers would absorb the hypothesized increase in tax rates; this action would imply a decision to expand market share instead of maximizing profits (or minimizing losses) in at least the short run, if not longer.

In general, any reaction of U.S. primary producers to hypothesized Superfund tax increases would take into account the absence of Superfund taxes abroad, and the option of domestic as well as foreign purchasers of primary and of derived products to buy, at almost any point in the chain of production, such products made abroad from non-taxed feedstocks. Assuming that U.S. exports of the six primary substances would not be subject to the tax increase, the tax increase would not disadvantage U.S. products in export markets. 12/

In summary, there are at least a few responses to the hypothetical Superfund tax increases in the short run that one can reasonably expect; and there appears to be no preponderance of evidence that one is more likely than another. In addition, it is important to note that foreign suppliers, although free from Superfund taxation on production sold abroad (but not in the U.S.), and in some cases beneficiaries of lower raw material costs, are nevertheless subject to basically the same economic forces and constraints as domestic producers.

Because it is uncertain as to how U.S. producers and foreign suppliers would react in the short run, we present and analyze below two alternative behavioral "Scenarios" that more or less bracket the range of most likely behavioral combinations. They should not be regarded as the two most likely outcomes.

12/ Under H.R. 5640 as passed by the House, exports are exempted and rebates would be given for Superfund taxes paid on products eventually exported.

C. Impact on Primary Petrochemical Producers

1. Scenario 1 -- Tax Absorbed by Producers in Short Run

In this scenario of the industry and market, domestic producers are assumed to be "interdependent", as described in the previous section. Foreign suppliers are tending to charge lower prices than domestic producers, further deterring domestic producers from attempting to raise prices in order to pass forward all or part of the tax increase. It is assumed that foreign suppliers also do not attempt to increase prices.

To estimate the impact of the hypothesized increases in Superfund taxes on industry production, profits, and other operational aspects, we have followed a standard economic model that incorporates the relationship among costs, production levels, and profits. As seen in table 3, the hypothesized tax increases would, in the short run, raise estimated variable production costs (excludes depreciation, amortization, and overhead) of the six substances in 1987 by as little as 2.1 percent and as much as 6.6 percent. The corresponding increases for 1990 would be 3.4 percent and 7.0 percent. 13/ (These percent increases in costs would be higher if prices decline. H.R. 5640 provides for adjusting the tax amounts in case of price increases, but not for price decreases.)

With prices unchanged under this Scenario, the quantities demanded for the six products would not change (other things being equal), but industry profits would decline by the full amount of the increase. Assuming production at the 1984 level is the amount used or sold domestically, annual industry profits on the six products would decrease by about $490 million, or 4.4 percent

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13/ As discussed earlier, a per-unit excise tax is considered as an increase in the cost of production. The cost concept measured here is average variable cost. Analytically, the correct procedure is to determine the percentage of change in marginal costs. Data on marginal costs for each substance is not, to our knowledge, publicly available.

TABLE 3. Estimated Average Production Costs and Hypothesized Superfund Taxes for Six Primary Petrochemicals

Product	Estimated Average Per-Unit Variable Cost	Tax per Ton			Tax as a Percent of Average Variable Cost				
		Existing	Proposed 1987	Proposed 1990	Existing	Proposed 1987	Proposed 1990	Change 1987	Change 1990
Benzene	$ 288	$4.87	$13.20	$17.60	1.7%	4.6%	6.1%	2.9%	4.4%
1,3-Butadiene	531	4.87	19.58	26.11	0.9	3.7	4.9	2.8	4.0
Ethylene	279	4.87	13.78	18.37	1.7	4.9	6.6	3.2	4.8
Propylene (chem.)	284	4.87	11.74	15.65	1.7	4.2	5.5	2.4	3.8
Toluene	261	4.87	10.38	13.84	1.9	4.0	5.3	2.1	3.4
Xylene	248	4.87	21.30	22.35	2.0	8.6	9.0	6.6	7.0

Note: Average variable cost is estimated at 0.9 percent of price.

Sources: Table 2; Public Law 96-510; Congressional Record, August 10, 1984; CRS estimates.

of sales, if the hypothesized 1987 tax level is fully absorbed. The corresponding decrease for the 1990 tax level would be about $630 million, or 5.6 percent of sales. In 1981 through 1983, before-tax profits on the six products averaged about 1.24 percent of sales for 26 companies that are large producers of those products according to a survey by Price Waterhouse. 14/ Since that period, volume produced and sold has increased 15/ and raw material costs have fallen, 16/ but product prices have fallen as well.

Profit margins probably have widened somewhat since 1981-83. But it is clear that the hypothesized Superfund tax increases could still generate industry losses.

Such substantial declines in profits are not likely to affect production levels in the short-run. But in the long-run, assuming production costs cannot be reduced elsewhere, capital resources would leave the domestic industry, since the rate of return after taxes would be lower than in other industries. The result would be reduced industry output and employment.

These long run effects would spill over onto other sectors; the decline in demand for oil and natural gas would affect oil and gas production. As the primary petrochemical industry contracts, prices to secondary users would increase as demand fell. Hence, even if producers absorbed the tax in the short run, in the long run, prices would still rise until equilibrium was restored.

14/ Price Waterhouse, A Comparison of Sales to Earnings Ratios for Chemical Companies for Their Overall Sales and Sales of Products Subject to CERCLA Taxes (March 15, 1985). The survey was commissioned by the Chemical Manufacturers Association.

15/ Relatively small changes in production affect profitability by much larger relative amounts.

16/ Acquisition costs of crude oil currently average about 15 percent the average level for 1981-1983.

Effects on Imports and Exports. With everyone's prices unchanged, the share of the domestic market for the six primary petrochemicals accounted for by imported products would be maintained in the short run.

In the long run, shrinkage in the U.S. industry as a result of low profitability would lead to lower domestic output and a smaller share of the U.S. market. Foreign suppliers presumably would be absorbing the tax increase on only part of their production, and would not experience as sharp a drop in overall profitability as U.S. producers. Assuming no change in the total quantity sold in the market, the quantity of imports would increase.

Assuming exports of the six substances would be exempt from the hypothetesized tax increases (as under H.R. 5640), U.S.-produced primary petrochemicals would not be at a competitive disadvantage in foreign markets. Sharply-reduced profitability on domestic sales, however, may well affect the ability of U.S. producers to compete worldwide. Also exports would decline to the extent that U.S. producers would relocate to foreign countries and focus on foreign markets.

2. Scenario 2 -- Tax Passed on by Producers.

Partly because of the severity of the potential impact on domestic primary producers under scenario 1, there are reasons to believe that domestic primary petrochemical producers will strive very hard, and probably would be able to shift forward part of the tax increase. (a) Profit levels of domestic producers may not be large enough to absorb the proposed tax increase. (b) Imported products would also be subject to the tax increases, and foreign suppliers would be faced with potential large decreases in profits. (c) The domestic intermediate petrochemical industry (users of the primary products) is composed of more firms and, therefore, probably is more competitive than the primary petrochemical industry. (d) As recently as the second oil price shock, domestic primary petrochemical producers were able to pass forward at least part of the large increase in costs through sharply increased prices.

Here, the price elasticity of demand as well as supply is a crucial element. Since there is little evidence as to what those elasticities are, we have used two assumptions for each: -0.3 and -2.0 for demand; and +1.0 and +8.5 for supply.

The results derived from the extreme alternative world where all the tax is passed forward — will differ from that in which all the tax is absorbed by at most 50 percent, according to established economic theory. 17/

While intended to be illustrative, these figures are based on both empirical and theoretical evidence. Regarding demand price elasticity, one recent study postulates a price elasticity of demand for four primary petrochemicals of from -0.14 to -0.53. 18/

Regarding, supply price elasticity, the same study referred to above includes a supply price elasticity for propylene of +8.5. 19/ Because we were unable to find other supply price elasticities, it is difficult to know how well +8.5 approximates the actual elasticity. Estimated supply price elasticities for other industries, however, are generally much lower. Because of the greater uncertainity, we have set a wider range for supply price elasticity than for demand price elasticity.

17/ More precisely the changes in price and in quantity under pure monopolistic conditions will be half those under competitive market conditions. See, for example, Richard A. Musgrave and Peggy B. Musgrave. Public Finance in Theory and Practice. New York: McGraw-Hill Book Company, 1973. p. 436-438.

18/ Management Analysis Center, Inc. Superfund Financing: An Analysis of CERCLA Taxes and Alternative Revenue Approaches. Los Angeles, CA. March 6, 1984. The report does not explain how the elasiticities were arrived at.

19/ Superfund Financing: An Analysis of CERCLA Taxes and Alternative Revenue Approaches.

Table 4 shows the effects under scenario 2. If the supply price elasticity is +1.0 and the demand price elasticity is -2.0, prices of the six primary petrochemicals would rise, on average, 1.1 percent under 1987 proposed tax levels; the total quantity demanded would decrease by 2.1 percent. If the supply price elasticity is +8.5 and the demand price elasticity -0.3, prices would rise 3.1 percent on average. The alternative elasticity assumptions would give results that lie between the above figures. These results reflect the fact that when supply is less elastic and demand more elastic, it is more difficult to shift the tax forward and producers bear relatively more of the tax.

TABLE 4. Estimated Changes in Production and Prices Under Scenario 2

	Tax Level							
	1987				1990			
Percent increase in costs	3.2%	3.2%	3.2%	3.2%	4.6%	4.6%	4.6%	4.6%
Assumed supply price elasticity	+1.0	+1.0	+8.5	+8.5	+1.0	+1.0	+8.5	+8.5
Assumed demand price elasticity	-0.3	-2.0	-0.3	-2.0	-0.3	-2.0	-0.3	-2.0
Percent change in quantity	-0.7%	-2.1	-0.9	-5.2	-1.2	-3.1	-1.3	-7.5
Percent change in prices	+2.5%	+1.1	+3.1	+2.6	+4.0	+1.5	+4.4	+3.7

Note: Data are weighted averages for the six primary petrochemicals focused on in this report.

Source: Text; Tables 1 and 3; U.S. International Trade Commission.

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Under the 1990 tax levels, prices would increase by larger percentages compared with 1987 and output would decrease more because the proposed tax rates in 1990 would be higher than in 1987.

Thus, under scenario 2, prices would rise and the quantity demanded would fall, leading to reduced domestic production and employment. The extent of these effects would depend upon the behavioral postulates concerning the price elasticities of supply and demand.

Effect on Imports and Exports. Under scenario 2, foreign producers would probably increase their prices in the United States commensurate with the increase by domestic producers. This would preserve the market share. The level of imports would decline as prices increase but the relative proportion of domestic output and foreign imports should be maintained.

U.S. producers would not be at a competitive disadvantage in foreign markets except to the extent that the domestic tax would adversely affect the profitability of the industry in the United States.

D. Impact on Intermediate Petrochemical Producers

As the previous discussions suggest, the effect of the proposed tax increases on producers of intermediate (secondary) petrochemicals depends upon the response of the primary petrochemical industry to the tax increases.

If the primary petrochemical industry does not shift the taxes because interdependence among firms would not permit it or because of competition from foreign producers there would be little short-term impact on the intermediate petrochemical industry. Firms in the industry would continue to demand the same quantities of primary substances because the prices charged

In the long-run, however, a smaller U.S. primary petrochemical industry and greater demand for foreign products would tend to result in higher prices charged to intermediate producers, as well as greater imports of primary substances. This will affect the level of output and profitability of the secondary industry since they would be unable to pass on these higher costs to tertiary producers, or producers of final products (because imports of secondary substances are not and would not be subject to Superfund taxation).

If domestic primary petrochemical producers, along with foreign suppliers are able to increase prices (and reduce output), at least part of the short-run burden of the hypothesized tax increases would fall on intermediate producers. The extent of the short-run incidence depends on how much primary producers are able to raise prices, and on the elasticities of supply and demand for intermediate products. Because U.S. buyers of intermediate products can purchase materials made abroad from non-taxed feedstocks, it is likely that domestic intermediate producers will not be able to increase prices sufficiently to cover the increase in their costs.

In the long-run, if intermediate producers would not be able to increase prices sufficiently to cover the increase in costs, lower profitability would cause resources to leave the industry — and domestic production and employment would decrease.

E. Effect on the U.S. Oil Industry

Because H.R. 5640 would increase Superfund taxes on crude oil, the U.S. petroleum refining industry, too, would experience increases in production costs. Moreover, the several integrated oil companies (with petroleum re-be subject to higher Superfund taxation on the costs of both their inputs (crude oil) and on some of their outputs (primary petrochemicals). H.R. 5640 would raise the tax on crude oil from 0.79¢ ($.0079) per barrel to 9.65¢ ($.0965) per barrel, assuming no waste-end tax. This would increase oil tax liabilities from about $40 million per year to about $480 million per year.

As suggested by the data in table 1, most of the largest U.S. primary petrochemical producers are vertically integrated oil companies (with petroleum refining divisions or subsidiaries). Although these constitute a minority of the total number of producers, they apparently account for most the Superfund tax liability. Ten of the 12 companies that are believed to pay 70 percent of Superfund taxes are major integrated oil companies, 21/ and taxes on petrochemicals and petroleum combined account for 80-85 percent of total Superfund tax liability.

Therefore, the question of who would pay the expanded levels of Superfund taxation is also a question of the extent to which the major oil companies would pay the tax. The fact that they are vertically integrated firms complicates the analysis beyond the scope of this report. But it should be noted the hypothesized increase in the petroleum tax equals only 0.3 percent of U.S. refiners average crude oil acquisition cost in early 1985.

It is possible that the major oil companies would attempt to shift both the increase in the crude oil tax and in the taxes on primary substances backward onto factors of production. More specifically, they could lower the price they pay for crude oil. In this case, part of the burden of the hypothesized tax increases would be on indpendent oil products who sell to and land owners

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21/ Includes Conoco, a subsidiary of DuPont.

(royalty owners) other than the companies themselves. To the extent that the companies would shift the tax increase forward to downstream chemical producers or users other than themselves, those producers or users could end up paying part of the increase in the crude oil tax.

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